ATHLETIC JOURNAL

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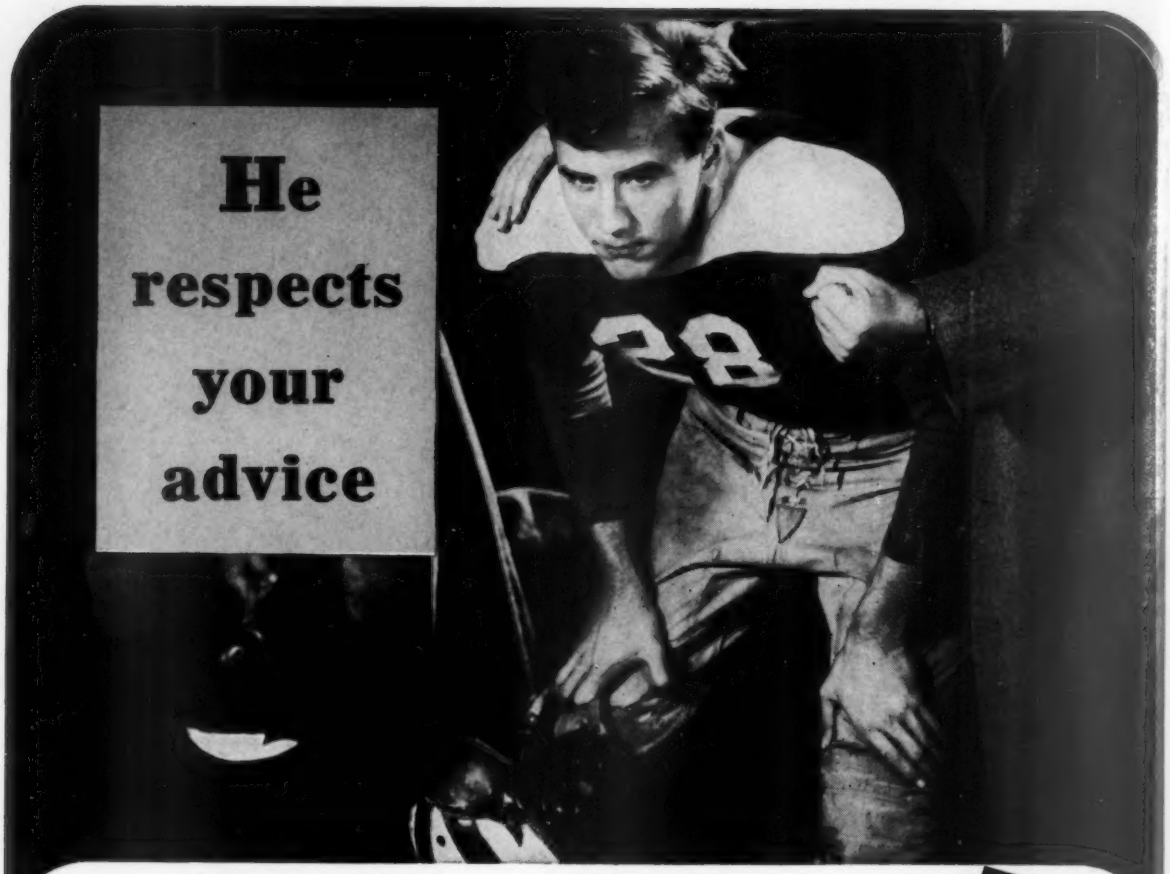
More About Line Play

Ellison E. Ketchum
E. R. Godfrey

The Athletic Coach and the Community Health Program

Joseph W. Hurley



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VOLUME XXII

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NUMBER 2

CONTENTS

for October, 1941

PAGE

5 Logical Line Blocking to Meet Changing Defenses . Ellison E. Ketchum

7 Individual Defensive Line Play . . . . . E. R. Godfrey

16 The Athletic Coach and the Community Health Program . . . . . Joseph W. Hartley

17 The Main Objective of Physical Education and Athletics . . . . . Arthur L. Trester

18 Editorials

20 Football Coaches! Teach Them, Do Not Merely Tell Them . . . . . William Landis

22 Methods and Techniques of Coaching Basketball . . . . . Joseph G. Daher

26 You Cannot Stand in the Way of Progress . . . . . H. V. Porter

30 The Passing Attack . . . . . William W. Belew, Jr.

31 Athletic Trainers Section

- 33 Editorial
- 34 Three Methods of Taping for Injuries and the Prevention of Injuries
- 36 Injuries of the Knee Joint . . . . . Frank D. Dickson, M.D.
- 39 The High School Trainers Plan in Operation
- 40 Training Room Equipment

44 A Basketball Clinic for the Spectator . . . . . Louis A. Zara

48 Football in Junior High School—Yes and No . . . . . Howard Mundt

48 A Survey of Preliminary Football Training . . . . . Elmer Huhta

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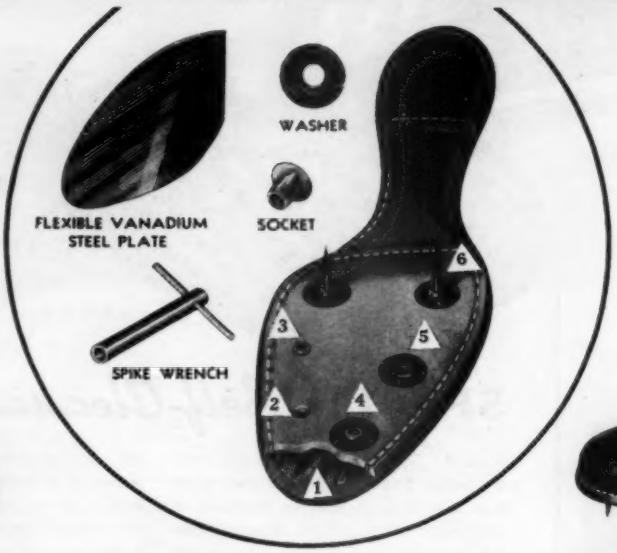

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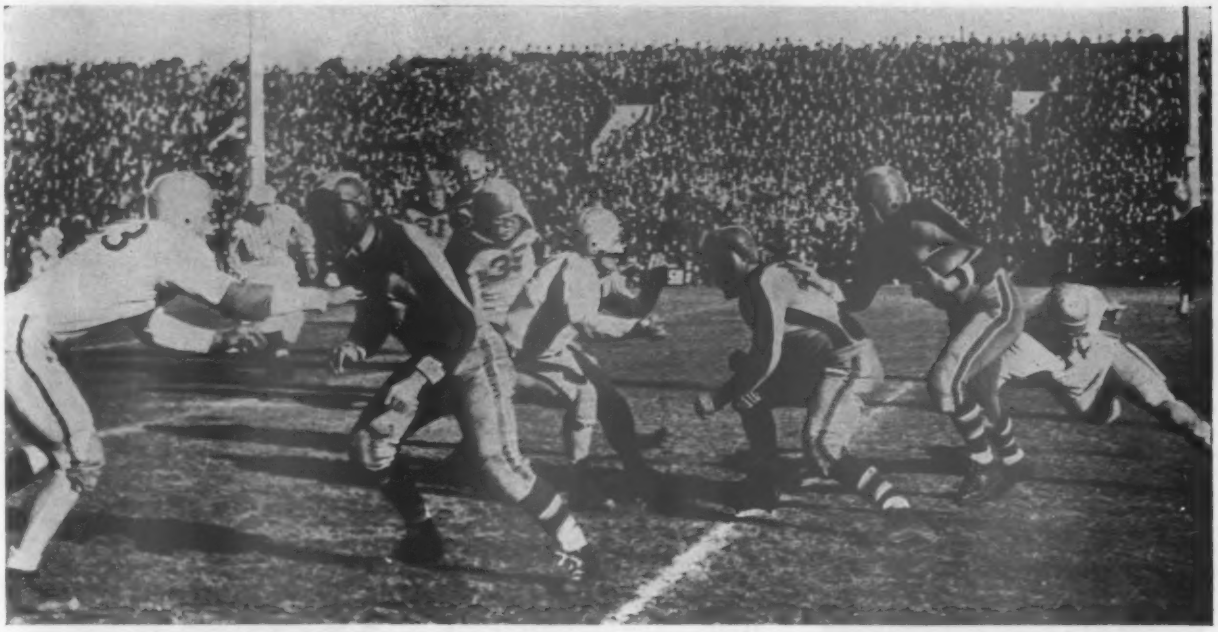


Denver University-Colorado University Thanksgiving Day Game, 1940 Shows Exceptionally Fine Downfield Blocking

Logical Line Blocking to Meet Changing Defenses

By Ellison E. Ketchum
Assistant Football Coach, University of Denver

OUR first experience with "logical blocking" came several years ago and quite by chance. It happened this way: Head Coach C. W. (Cac) Hubbard was reviewing plays through the medium of a chalk talk. During this session he asked a lineman to describe his assignment on the play which was being reviewed at the moment. The player, John Woudenberg, now playing with the Philadelphia Eagles, made the laconic reply, "Well, Coach, I figure I'd block the logical man." It was a highly amusing incident to everyone except the coach, and to him it was the birth of an idea which has been of inestimable value to us the past several years.

Obviously it would be impossible to get the entire team to block the "logical man" throughout the entire repertoire of plays which a well conceived offense possesses. Logic in line play can be effected, however, through standardization.

Coaches in general have long agreed that a sustained offense is impossible if the defense cannot be controlled from tackle to tackle. Every device and weapon known to offensive football has been utilized in an attempt to accomplish maximum control of the defensive line. Everything from a triple trap to screen and nuisance blocking oftentimes fails to accomplish this objective.

It is our opinion that an offense which fails, other things being equal, does so because of illogical and uncertain teaching methods. Play assignments, as designed on paper, may make impossible demands from a blocking standpoint. Furthermore, we do far too little work on our standard "bread-and-butter" plays and overwork our pet and seldom usable maneuvers.

Must Establish Standard Play

If you spend enough time on your standard plays between the tackles to make their execution faultless, you will have accomplished two very important objectives. First, you will standardize the opposition's defense. Second, your specialty plays will be more usable against such a set-up.

In order to teach blocking in the line for standard plays you must reckon with this one mental factor. There are times when a lineman is not sure of his assignment. Therefore, he must be given a "doubt assignment." Before explaining this "doubt assignment" principle, I shall list the four functions of an offensive lineman. It is our contention that as far as linemen are concerned there are only four plays in football from the standpoint of primary assignment and these are:

1. Block in the line (closest man). 2. Go through for the secondary. 3. Wall or retreat block. 4. Pull to: a. Lead the play; b. Cross block; c. Protect the passer; d. Trap-block.

The above are all primary assignments and in our reasoning there is only one follow-up or secondary assignment and that is: *Go to the ball.* This implies that the lineman will give blocking assistance and general protection to the ball-carrier until the play is blown dead.

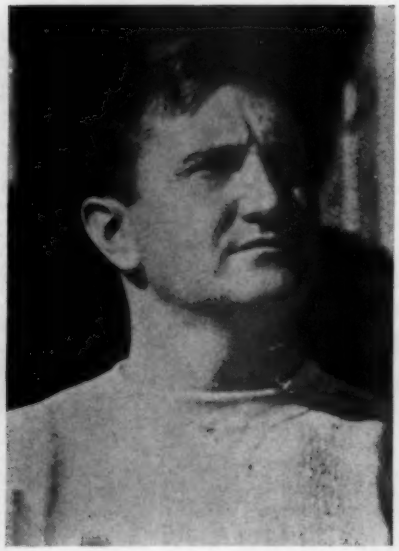
As indicated earlier, it is quite possible that a lineman may be in doubt as to which of the four primary assignments he should do under the circumstances which confront him. The defensive set-up may be unorthodox, and he can see a weakness in the play if previously planned blocking assignments are attempted. With this in mind, the following rules should be observed on standard plays between the tackles.

In case of doubt: 1. Look to the inside first and then block where you have position advantage. 2. Do not pull. 3. If there is no defensive man within a man of you

go through for a secondary assignment. If there is a man within a man of you, give assistance in blocking him.

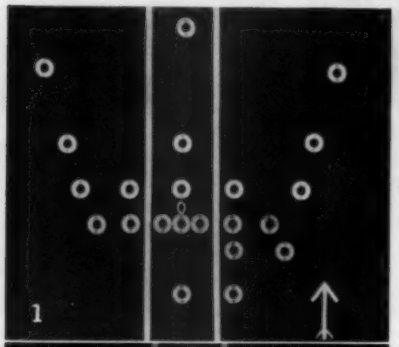
This system taught through line grouping is relatively easy to master. It can be taught by effecting splits in the offensive line for the purpose of teaching each lineman which logical group demands his primary assignment in accordance with the defensive set-up.

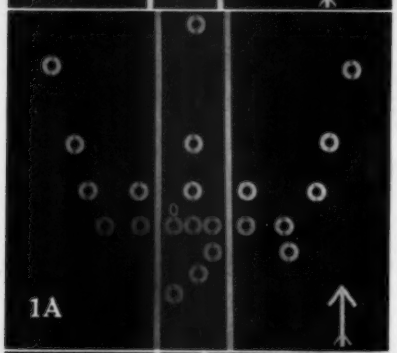
Sometime during the season, whether you run from a balanced or unbalanced line, you will be forced to meet at least four defenses. Some teams might conceivably use all four in one afternoon in accordance with their idea of how best to defend against the tactical situation.

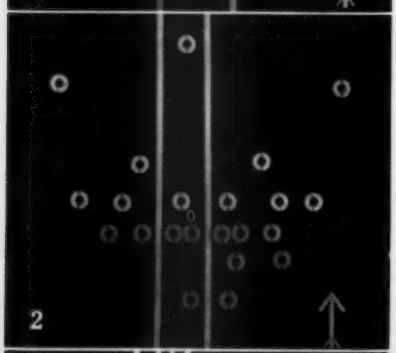


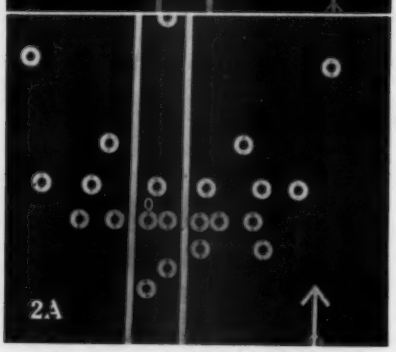
ELLISON E. KETCHUM

WHILE at the University of Denver, Mr. Ketchum played end for three years, gaining all-conference recognition and All-American honorable mention. He played also four years of basketball and one year of varsity baseball. He was graduated in 1930 and remained as freshman coach through 1930-1931. After coaching at Yuma High School, 1932-1933, and Longmont High School, 1934-1936, he became freshman coach in all sports at his alma mater in 1937. Since 1939 he has served as varsity line coach and in 1940 was appointed head basketball coach, both of which positions he now holds.









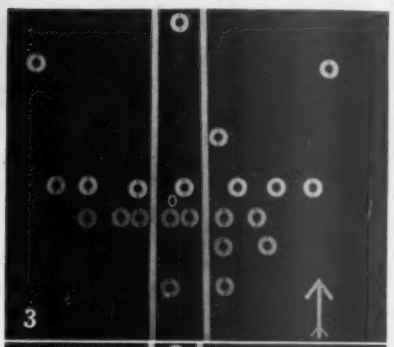
In the Illustrations 1 (balanced line, backs right) and 1A (unbalanced line, backs right), a normal grouping is illustrated for logical blocking against a standard five-man line defensive set-up. In this grouping the center trio are primarily responsible for the defensive middle lineman and backer-up. In the outside groups, the primary responsibility depends upon the hole being attacked, and the rules governing "doubt assignment" apply.

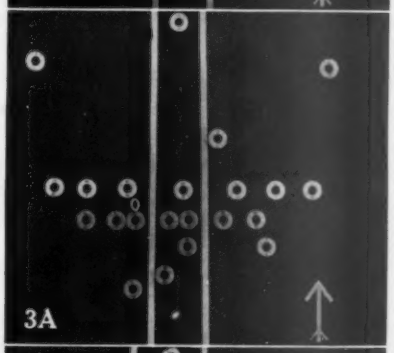
In Illustrations 2 (balanced line, backs right) and 2A (unbalanced line, backs right), normal grouping is illustrated for logical blocking against a standard six-man line defensive set-up. Primary responsibility is first given your own group, and the rules governing "doubt assignment" apply.

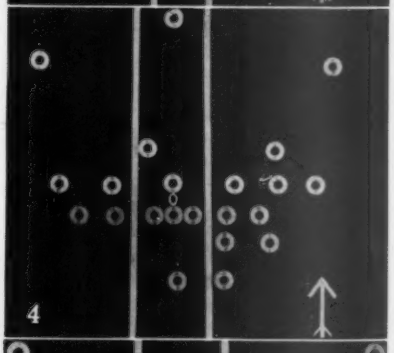
In Illustrations 3 (balanced line, backs right) and 3A (unbalanced line, backs right), normal grouping is illustrated for logical blocking against a standard seven-man line defensive set-up. Here again primary responsibility is first given your own group, and the rules governing "doubt assignment" apply.

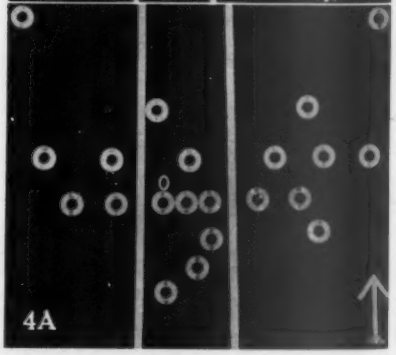
In Illustrations 4 (balanced line, backs right) and 4A (unbalanced line, backs right), normal grouping is illustrated for logical blocking against a specialized six-man line defensive set-up. This defense, which has the spacing of a seven-man line on the strong side and a five-man line on the weak side, has gained much favor in the past several seasons, and will no doubt become more widespread in its use as it

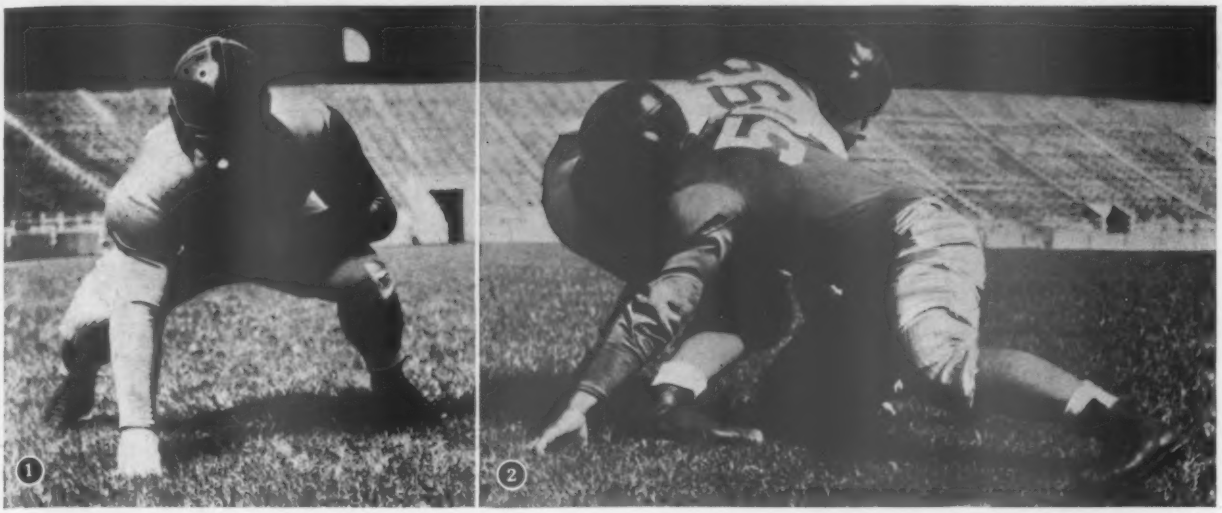
(*Continued on page* 53)











Individual Defensive Line Play

By E. R. Godfrey
Ohio State University

WHILE this article is written to describe individual play in detail, the reader should keep in mind that, in order to have an effective defensive line, *the players must work together as a unit*. The successful play of the defensive ends depends upon the tackles, and their success depends in turn upon the play of the guards. For the game of football today is different from that of twenty years ago. Then you heard at any coaching school, very emphatically, "Good line play begins with the defensive tackles." Now one hears, "Good defensive line play starts with good guard play."

The first responsibility of a defensive lineman is to play his "inside territory"—to control at least one yard of ground on his initial charge. He must not think of his "outside territory"; the man next to him is responsible for that space. In fact, the defensive lineman must not think of anything until he has taken care of his inside job. For every play, to a defensive lineman, is potentially going over him and to his inside until he finds out differently. Furthermore, if it is not a power play to his inside, he should consider it a trap play and act accordingly before charging deep or "sliding" to his outside territory.

Relatively speaking, a defensive lineman controls two doors—one to the left and another to his right. A defensive lineman charging to his inside will stop a play to his inside, but leaves the outside door open. Again, if he charges wide, he will stop any play to his outside, leaving the inside door open. Thus it is very important to have every defensive man play his inside territory first, for a defensive lineman that tries to play through both doors is not following sound principles.

During the last ten years more changes have taken place in defensive line play than in any other part of the game of football. This is due to trap plays and excellent deception. In the past a coach told his defensive linemen to charge hard and gain as much penetration as possible. Today, a coach warns his defensive men about charging beyond the blocking line. Note Diagram 5. In other years good line play used to depend on personnel, but today personnel is not enough. Now the men must work together as a unit, maintaining certain defensive positions at the sacrifice of individual play.

E. R. Godfrey.

With the passing of each year the game of football has been developing more deception, with every effort being made to pull the defensive linemen out of position. For that reason a defensive lineman must never follow the first man who appears to have the ball. He must charge, cover his inside territory, and then look if this is necessary.

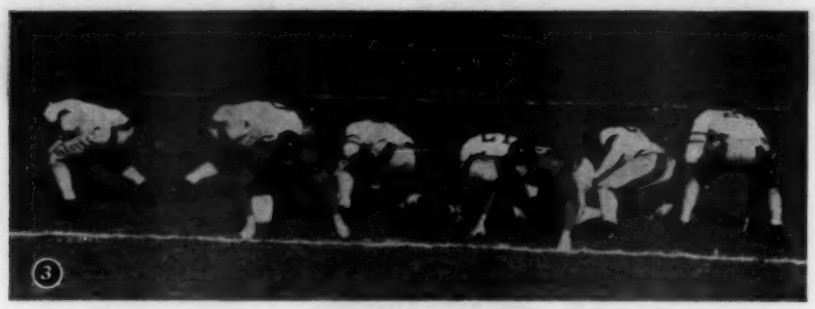
There are various types of defensive line play. As one successful coach stated at a national meeting: "It is impossible for a defensive team to play a six-man line and then shift into a seven-man line and play it correctly." That is to say, the theory behind the charges of a six-man line is quite different from that controlling a seven-man line.

Stance of the Defensive Linemen

The stance of a defensive lineman varies, depending on the position he is playing and on his location in front of the offensive formation. The stance for a defensive guard or tackle is similar to that of an offensive lineman. A defensive stance, however, may be a little lower to the ground, with more weight on the hand, since the player is charging forward all the time.

Defensive Guard Stance

Illustration 1 shows a defensive stance in which the following fundamentals are illustrated: 1. The feet occupy a wide but comfortable base. 2. One foot is under the body as far as possible, bringing the base closer to the neutral zone. The toe of the opposite foot is back about ten inches. 3.



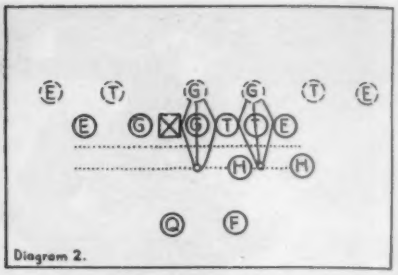


Diagram 2.

Enough weight of the body rests on the right hand to insure a forward movement, when the hand is released, with drive from the legs. 4. The buttock is lower than the shoulders, producing a stance that is snug to the ground.

Defensive Guard Play

For good defensive guard performance a player must assume a low, firm stance, with a wide base and one foot a little back of the other. The guard's base must be brought close to the line of scrimmage so that his body will be crossing the line of scrimmage with his first movement. He should take a three-point stance similar to an offensive stance, with more weight resting upon the hand on the ground.

The start of a defensive charge from this stance is similar to the start of an offensive shoulder block. There is this difference, however. The guard does not try to retain the contact that is made on the initial shoulder charge. If he hits into a shoulder block, his next objective is to loosen the contact.

The defensive charge must be simple but very aggressive, demanding the first yard of territory. To gain these objectives, the guard's first movement must be like an explosion, and the greater the explosion at the start of any defensive movement, the more the offensive blocking will be destroyed. What is needed in any defense are simple movements that develop power. Power, however, that develops slowly is not worth much, and for that reason an *explosive charge* is of great importance.

There are two types of defensive charges. In the first, the entire body is used to gain the advantage; in the second, the hands are used to gain the objective. It is difficult for the player to use both body and hands on the initial charge. A more logical procedure is for him to gain the first defensive position by the use of the body and then employ the hands.

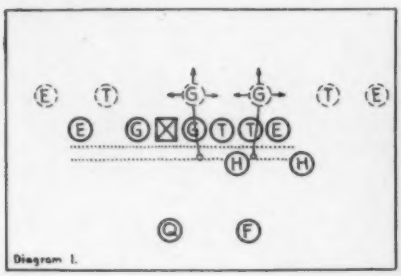


Diagram 1.

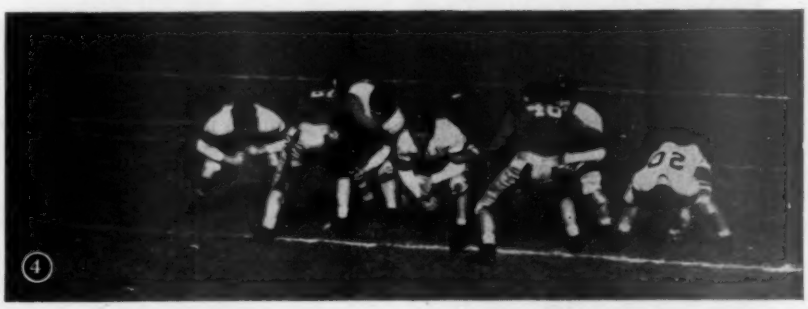
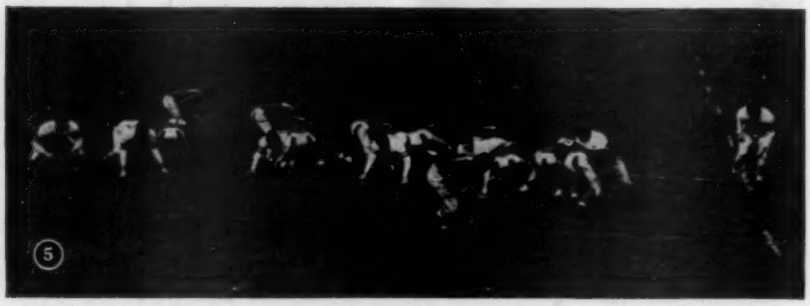


Illustration 2 shows a defensive guard going from his defensive stance, Illustration 1, into the uncoiling charge which is exactly the same as an offensive shoulder block. In Illustration 2, the defensive player holds a position from which the offensive man cannot drive him backward or laterally, and a defensive man can only assure himself of this protection by getting his body underneath the shoulders of the offensive blocker.

Again, in Illustration 2, the defensive man at the time of contact with his shoulder will loosen the contact instantly, forcing his body across the line of scrimmage by the use of short, powerful steps. The defensive guard should never turn his body sideways from the start of his defensive charge until he has reached the blocking line (Diagram 5). He must strive at all times to keep his chest parallel to the ground, with his feet under him. It is a common error for the defensive guard to uncoil, leaving his feet behind his center of gravity and turning his body sideways. This weakens his defensive charge. Quite often, too, the defensive guard takes too long a step, which makes it much easier for the offensive blocker to move him laterally. That must not happen, as Diagram 1 illustrates by the use of arrows. It is up to the defensive guard to control the yard of territory directly in front of him before "sliding," and this can be accomplished by the simple defensive charge shown in Illustration 2. It is important that the defensive guard direct his charge straight ahead. Of course, he can vary his charge, so long as he recovers and controls the territory directly in front of him.

Notice Diagram 2, which shows the option a defensive guard has in control of his territory. After he has completed and



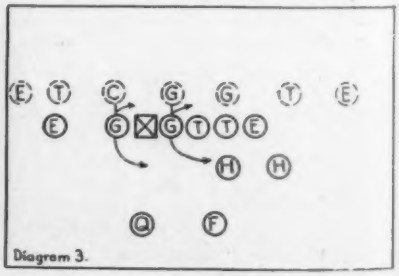
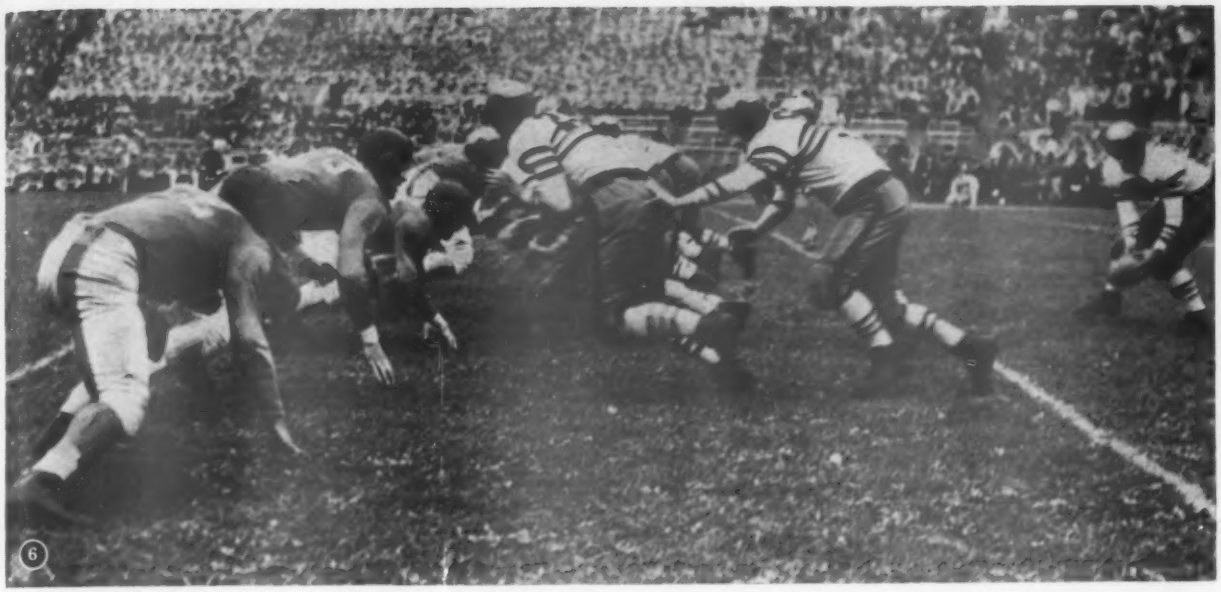


Diagram 3.



controlled his initial charge of one yard, he stops and looks. This is an important point to remember, for if he makes sure to reach a certain defensive position before looking, he will never be pulled out of position by the deception of the play. The depth to which a defensive guard charges is important in this connection. In fact, he should never charge deeper than the blocking line (Illustration 3).

Diagram 5 charts what is meant by the blocking line. It is the path an offensive lineman uses behind the scrimmage line when pulling out and running interference. Any defensive man who can get enough penetration to occupy a position in this path will destroy more offensive development than at any other place on the field. Then, too, after a defensive guard has played his territory and commanded that one yard, he can slide and perhaps extend his charge after locating the ball-carrier.

The Defensive Guard Against Trap Plays

Trap plays are making defensive guard work very difficult. Ten years ago a defensive guard would charge and drive deep into the opponent's territory. Today, however, this type of play would be suicidal. That is another reason why a defensive guard must never charge beyond the blocking line.

Illustration 3 shows two defensive guards who have successfully completed their initial charge to the blocking line. Observe that they have not been moved laterally, and, if a trap play develops over their territory, they are in a good position to meet it defensively. Then, from this position they can locate the ball-carrier and slide to the point of attack.

The following specific suggestions may be given a guard:

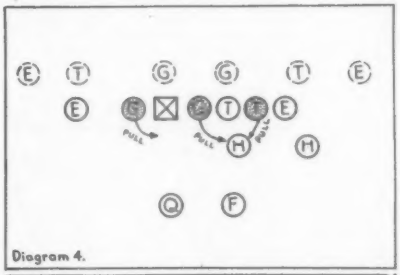


Diagram 4.

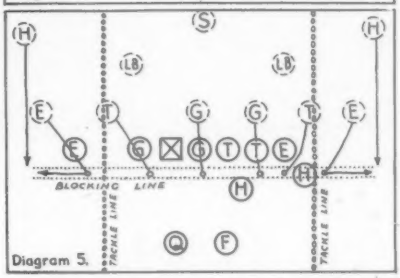


Diagram 5.

1. Do not charge, if the offensive lineman in front of you charges on by, and do not make bodily contact first. Drop to the ground, occupying a six-point stance —feet, knees, and hands on the ground as shown in Illustration 3, so that an offensive blocker cannot move you laterally.

2. Never charge if the man in front of you pulls. Hit and slide. Note Diagram 3. Here the defensive guards hit and slide when the offensive men in front of them pull.

3. If you decide to charge when trap plays are being used, charge directly at the offensive fullback. Before every trap play, the offensive fullback fakes to one of the other backs, hoping that the deception of the play will pull the defensive guard wide, leaving an opening.

4. As a defensive guard, play, if possible, in front of offensive linemen who never pull (Diagram 4). A defensive guard hitting into an offensive man on his initial charge cannot be trapped easily.

Types of Charges Used by Defensive Guards

No lineman should employ the same type of defensive charge during the entire game. In fact, there is no one thing that a defensive man can do to make his playing more effective than to vary his charge. For that reason a good defensive guard should have at least three types of charges: (1) A low body charge; (2) A hit and slide; (3) A going-over-the-top.

Illustration 4 shows two guards stepping in with the right foot and using a forearm to drive the offensive man backward and off the scrimmage line. They take enough force out of the offensive man's charge so that, if the play does develop over them, they can meet it successfully. From the position they hold, as shown in Illustration 4, they release themselves by stepping back with extended foot and sliding in the direction in which the play is going.

Illustration 5 shows two defensive guards hitting and sliding. On this type of charge it is important that they step in quickly, using the forearm to control their territory before sliding.

In going over the top of an offensive lineman, the defensive man goes head first, sliding his chest over the backs of the offensive lineman. His feet are the last part of his body to pass over the blockers. It is a very simple charge but also an effective one when done correctly. In making this charge, the player does not vault or place his hands on the backs of the offensive men.

A defensive guard must not charge low every time. If he does, the offensive blockers will go lower, making his charge much more difficult. The hurdle charge is

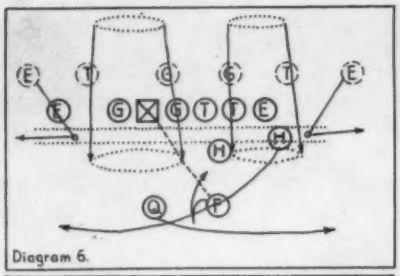


Diagram 6.

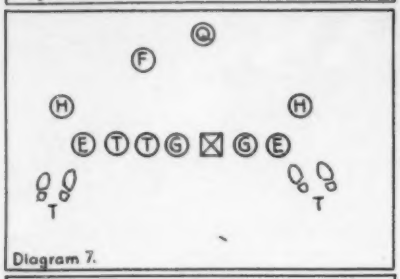


Diagram 7.

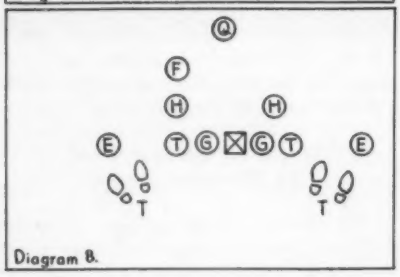


Diagram 8.

recommended for use about one time out of ten when the offensive team needs big yardage for a first down.

Relationship of Guard Play to Team Defense

The foundation for good defensive line play is to have the guards control the first yard. They must avoid being moved sideways or backward. If the defensive guards control the first yard, when they reach the blocking line they will find themselves a little closer together than they were on their original defensive positions before the ball was snapped. Illustration 5 shows this play. This is also true for the entire defensive line. The linemen are playing their inside territory first, and Diagram 5 shows exactly what the defensive line has accomplished. Here the middle defense men charge to the blocking line. The offensive team needs this path clear for linemen to run interference. For that reason any defensive man who can get into the blocking line is in a good position to make trouble. It is the objective of both guards and tackles to reach this point before moving laterally. Illustration 21 gives a clear picture of the blocking line.

In Diagram 5 notice that, after the entire defensive line has charged to the blocking line, the players are closer to one another than they were when the ball was snapped. In this kind of charge the players form the small mouth of a funnel, which will not open easily. When defensive linemen charge away from one another, they reach the blocking line as the wide mouth of a funnel. Diagram 6 charts what will happen when the linemen charge in different directions.

The tackle line (Diagram 5) is a line drawn through the defensive tackle parallel to the side line. In Illustration 5, the defensive tackle got enough penetration to control his territory and now acts as a post for the defensive left end, who has swept in to his tackle line, making an inside play impossible. In fact, the defensive end must not only reach the blocking line but must strive also to reach the blocking line on his initial charge, from which position he will co-operate with the

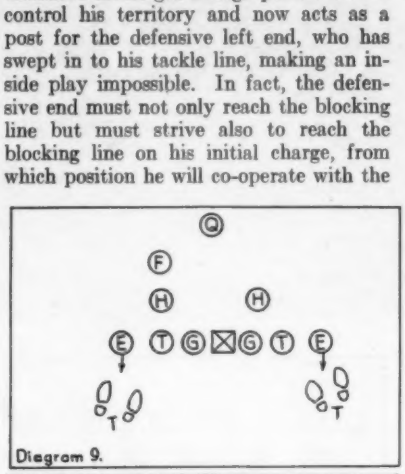


Diagram 9.

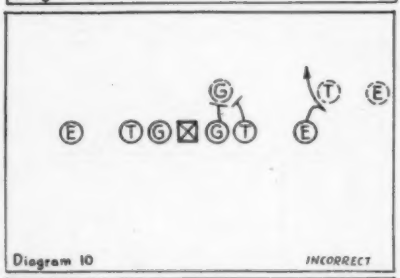


Diagram 10 INCORRECT

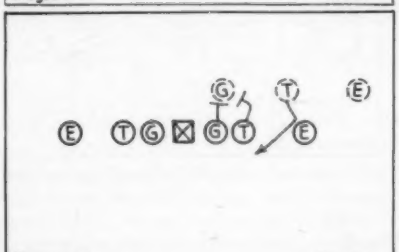


Diagram 11. CORRECT

rest of his team mates in playing his defensive end game.

Illustration 6 shows the action of two Western Conference lines starting their offensive and defensive charges. Notice that the team in the dark uniforms is coming up on its defensive charge. It is a common, but not good, practice for both the offensive and defensive linemen to rise before charging. Observe that the third man from the right end of the defensive line is starting a low charge which will allow him to play his territory without any difficulty, for the offensive men are too high to drive him out of position with a shoulder block. The lower the defensive line charges, the lower the offensive blockers must remain on their initial charge, and a low defensive charge thus makes the task of the offensive linemen much more difficult.

Defensive Tackle Stance

The defensive tackle may assume a three- or four-point stance, depending on which seems the more natural for the player. In taking his stance, he should bring his base as close as possible to the line of scrimmage, with his balance well forward. Illustration 7 (see also Illustration 8) shows the player in the dark uniform taking the correct defensive tackle stance.

The stance of the defensive tackle varies, depending on whether he is outflanked by a wing halfback or is playing against an offensive end. Illustration 8 shows the stance of a defensive right tackle, standing with his line of force toward his most dangerous man. In taking this stance, he presents his left leg to the offensive left end. He also gets his left foot as far under his body as possible, which brings his base closer to the line of scrimmage. The stance for a defensive left tackle, when outflanked by a wing halfback, is the reverse of this. Here he has the right foot forward and his left foot back. This position is charted in Diagram 7, which shows the position of the feet of the defensive tackle when outflanked by a wing halfback.

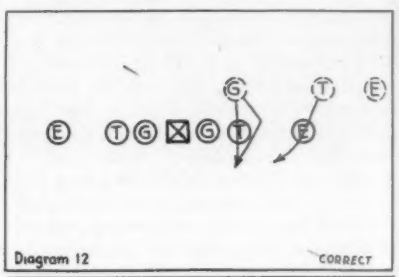


Diagram 12 CORRECT

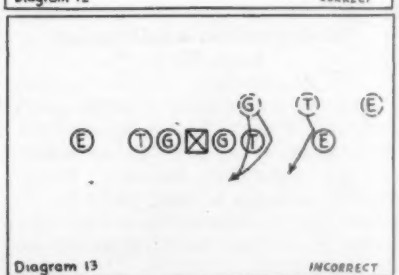


Diagram 13 INCORRECT

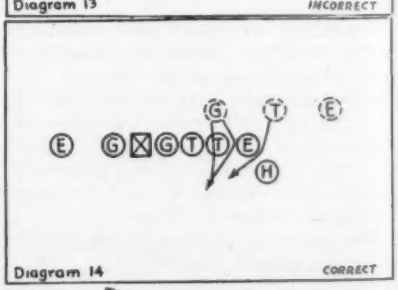


Diagram 14 CORRECT

The stance of a defensive tackle, when playing to the inside or outside of an offensive end, is the same as that when he is being outflanked by a wing halfback. The only differences are in the position of the feet and in the uncoiling charge. Diagram 8 pictures the positions of the feet for the left and right tackles when playing to the *inside* of an offensive end. A defensive tackle would assume the same stance as that shown in Diagram 8 when playing on the weak side of a single-wing back formation. This is shown again in Illustration 9. Here a defensive right tackle is in action against the weak side of a single-wing formation. Diagram 9 shows the stance of a defensive tackle and the position of his feet when playing to the *outside* of an offensive end.

Defensive Tackle Play

On checking through numerous reels of football games, I have noticed that, regardless of what system of line play is being used, the highly co-ordinated movements are not used under game conditions. For that reason the best defensive tackle play develops from low, simple, and powerful movements. In fact, most of the time the tackle gains his defensive advantage by a simple body charge.

For example, a low-charging tackle gets down on a three- or four-point stance and then, with the snap of the ball, relies mainly on his weight and leg drives. This type of charge usually enables him to break through the offensive end and wing halfback.

A defensive tackle, however, must try to avoid a trap play, especially when he is allowed to cross the scrimmage line unmolested. For, as he drives into the backfield, he is suddenly hit from the side. To avoid this kind of a trap, it is usually safer for the defensive tackle to hit and slide. In fact, with his first movement he should strike with the force of an explosion, using bent arms close to the body to fight off offensive blockers.

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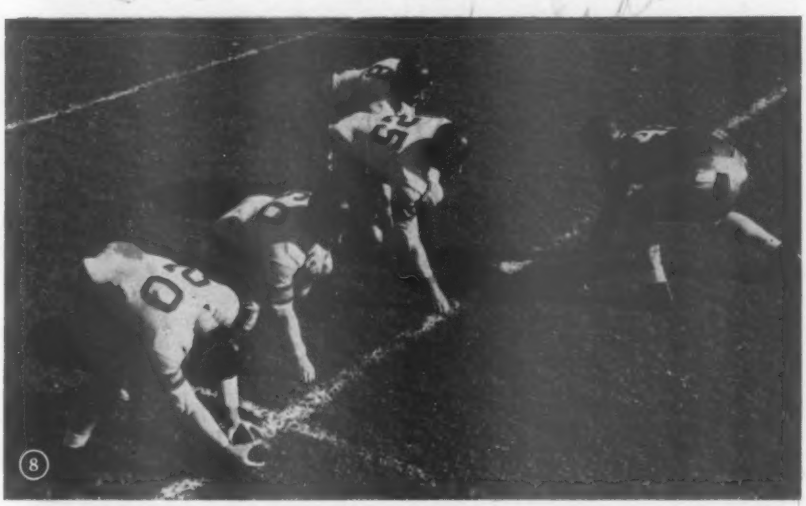
Defensive tackle play is vital. One coach of the Western Conference said recently, "I like to think of a defensive tackle as a shock absorber on an automobile." That is the reason why a tackle must be a big boy, perhaps the biggest on the team. But a tackle must be still more than that. He must also be fast and agile.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Two Types of Defensive Tackle Play

There are two kinds of situations which the tackle faces in defense: 1. When outflanked by an end and a wing halfback. 2. When playing against an offensive end only. Examples of this type include punt formation, Notre Dame formation, and the weak side of a single-wing formation.

Before a defensive tackle can play an intelligent game in the first type of situation, he must know where the defensive man to his inside is playing in order to direct his charge properly. Note Diagrams 10 and 11 for illustrations of correct and incorrect tackle play. In Diagram 10 the left defensive tackle cannot play to the outside of the offensive right end without leaving an opening between himself and the defensive guard, and the position shown is, therefore, incorrect. In Diagram 11, the defensive tackle is playing the correct position. He recognizes that the offensive right end has a flanking block and, for that reason, on his first movement he steps into the end.

In Diagrams 12 and 13 also, we have correct and incorrect positions shown. Diagram 12 shows the correct position of a defensive left tackle when the guard is playing over the offensive right tackle. The possibility for the offensive to gain ground between the defensive guard and left tackle in Diagram 10 is perfectly set up. In Diagram 12 it would be almost impossible. In Diagram 13 the defensive left tackle does not need to play inside the offensive end, since he has help from the guard.

Next notice Diagrams 14, 15, and 16. Diagram 14 shows the defensive tackle charge, when he is outflanked by a wing halfback with the guard playing over the offensive right tackle. Diagram 15 illustrates the correct defensive tackle position when the left guard is playing over the offensive right tackle. Diagram 16 charts an incorrect defensive charge of the defensive left tackle who leaves an opening.

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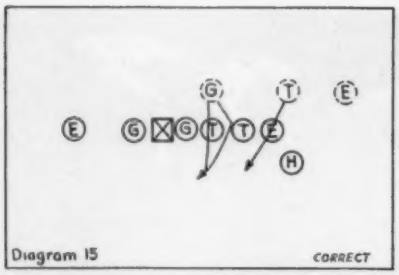
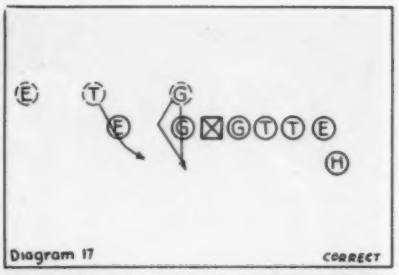
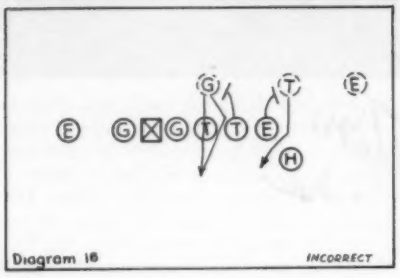
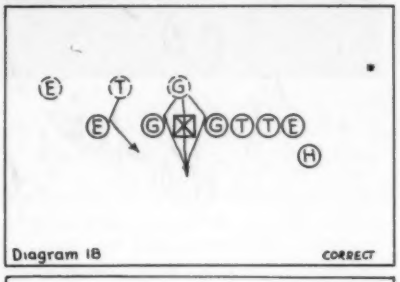
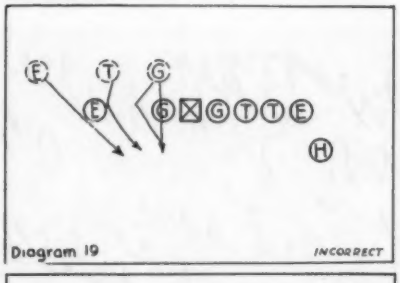
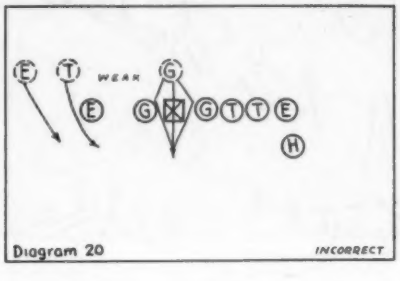












In the diagrams that follow, 17, 18, 19, and 20, are shown the correct and incorrect positions for defensive tackle play under the second situation mentioned before, that is, when the tackle is playing against an offensive end only. As before, the direction of the defensive charge must be governed by the position of the defensive man to the inside of the tackle.

In Diagrams 17 and 18 we have the correct defensive charge of the weak-side tackle when the defensive man to his inside is playing over the left guard, as shown in Diagram 17 and over the center, as shown in Diagram 18.

In Diagrams 19 and 20 we see incorrect defensive charges of the weak-side tackle, when the defensive man to his inside is playing over the left guard, as shown in Diagram 19 and over the center, as shown in Diagram 20. In Diagram 19 we have too much defensive strength between the offensive left end and left guard. In Diagram 20, there is an opening between the weak-side tackle and guard.

Play of the Defensive Tackle When Outflanked by a Wing Halfback

The first responsibility of a defensive tackle when outflanked by a wing halfback is not to allow the offensive blockers to drive him laterally to either side, or backward. Observe Illustration 10 and Diagram 21.

The least the defensive tackle must do is make a pile-up which his defensive end can use as a post to play his inside territory. If the defensive tackle can get a yard or two of penetration to his inside, he will find himself in a perfect position to play his territory.

A defensive tackle who is outflanked by a wing halfback is really a sub-guard and plays his territory accordingly. Illustration 10 shows the uncoiling charge of a defensive tackle when outflanked by a wing halfback. Here on his first movement he lowers his left knee within a few inches of the ground and steps with his right foot, driving his right knee into the wing halfback and using both arms, flexed, to deliver the initial blow. At all times, too, the defensive tackle should keep a wide base, with his chest parallel to the ground.

Most defensive tackles go too deep on the initial charge. A tackle's first responsibility is his inside territory, and he must always make an effort to get to a certain spot before sliding. In Diagram 21, the defensive left tackle cannot be driven backward or moved laterally. The least he can do is to hold his territory, but if possible, he should drive through to the blocking line, varying his charge as indicated. When he reaches the blocking line, he must stop and move laterally, depending on the direction in which the ball-carrier goes.

A defensive tackle always works *through* trouble. He never goes *around* it to reach his objective. If he cannot work through trouble, he should at this point hold his territory, step back, and play his inside, say, for example, as shown in Illustration 8, that the pressure is coming from his inside. The offensive left end is trying to drive him out. Here the first reaction of a young defensive tackle is to go around the block. If he cannot drive through, it is best to stop, retreat, and make the play to his inside.

Illustration 11 shows perfectly the defensive left tackle working through the pressure of the block. The offensive right end is trying to block the tackle, 1. The latter immediately starts to work through the block. This is an action picture taken in a Western Conference game.

The Defensive Tackle Charges According to Down and Position

A smart defensive tackle will vary his charge with the down and the distance to go. In doing this, he does not sacrifice team defense or fail to play his inside territory.

On first down and ten the defensive tackle charges through the offensive halfback (Diagram 14).

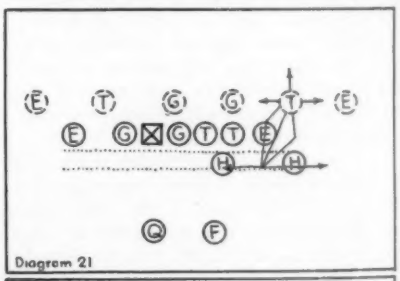
On third down and one the defensive tackle charges through the offensive end (Diagram 22).

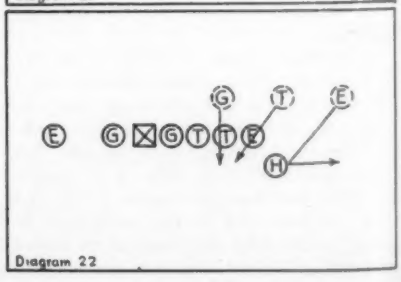
On second down and four yards to go, the defensive tackle charges between the end and the halfback (Diagram 23).

On third down and nine yards to go, the defensive tackle charges through the wing halfback supporting to his inside and then rushes the passer (Diagram 24).

Defensive Tackle Play Against an End Without Wing Halfback

When a defensive tackle is outflanked on the weak side of a single-wing formation or punt formation, his defensive play changes. His stance may be a three-point,





but the position of his feet is very important. He must not charge blindly when outflanked by an end—not unless there is a big gap for him to charge through before an end can make contact with him.

In Diagrams 25 and 26, we see the position of the feet he should use against single-wing and punt formations.

The defensive right tackle, as shown in both diagrams, brings his left foot as close to the scrimmage line as possible while still keeping on-side. Then he steps with his right foot into the left end, driving at the same time with his right arm which is bent and held close to his body. At this point, if the offensive left end sets any kind of a block on the tackle, the direction of the latter's charge is through the end. If the offensive end, however, passes up the tackle, the latter steps in with his right foot at the offensive end, holding his left foot in its original position until he steps toward his inside. This type of movement

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prevents him from getting too much depth on his initial charge. Instead he will be charging along the blocking line, able to meet any trap play to his inside effectively.

A defensive tackle playing on the weak side of a single-wing formation should never gain any depth on his defensive charge. This type of charge is also effective against the punt or the Notre Dame formations.

Illustration 12 shows the stance of a defensive right tackle against an offensive end. Notice that his right foot is back and his left foot forward. From this stance he will step with his right foot and with arm bent into the left end. If the offensive left end sets a block on him, he will work through trouble to reach his objective.

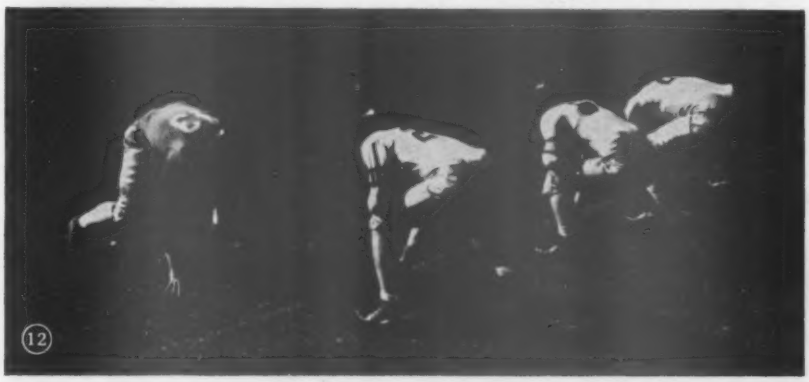
Defensive Center Play

The play of a defensive center depends upon the type of defense that is being employed. If a defensive seven-man line is being used, the work of the center is similar to that of a defensive guard, for he must play his territory first before taking part in forward pass defense. In fact, the center is mentally in the line even when he is physically out of it.

The weakest offensive spot is over the offensive center, since he must first make his pass and then block. The defensive center generally plays directly over the offensive center, and, with small yardage to go, he disregards his passing responsibilities and charges the same as a defensive guard. However, when the defensive center plays in the line on the first down with big yardage to go, he steps in with an explosive, lifting hand charge, making certain, first, that the play will not develop over his territory. After that he slides in the direction in which the play is going and becomes an extra line backer, or he drops back and protects against forward passes. In fact, a sliding or roving center can be very effective in secondary support, since he does not expose himself as a line backer does. A good center must always be fast and alert. He should be a "ball-hawk," for an effective defensive center is always on the ball.

There are some other important points that a defensive center should remember. For one thing, when playing in the line, he commits himself with the snap of the ball. That is not true, however, when he plays the position of a line-backer. Then he does not commit himself with the snap of the ball, for all line-backers are "Scotch." They do not commit themselves until the offense develops clearly.

Diagram 27 charts the correct play for the defensive line-backers. Notice especially how they move parallel to the line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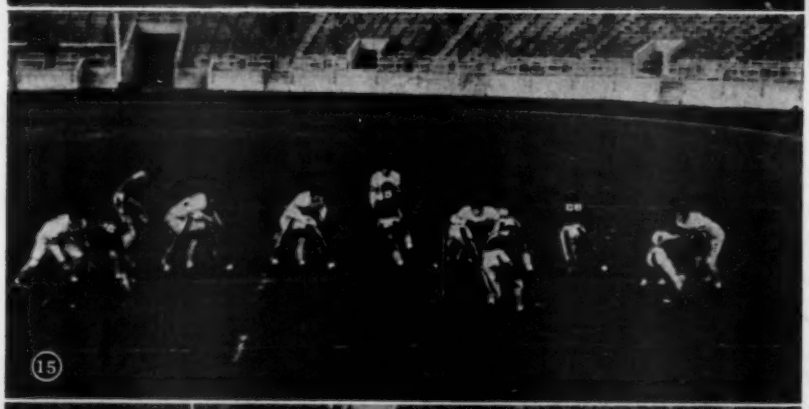

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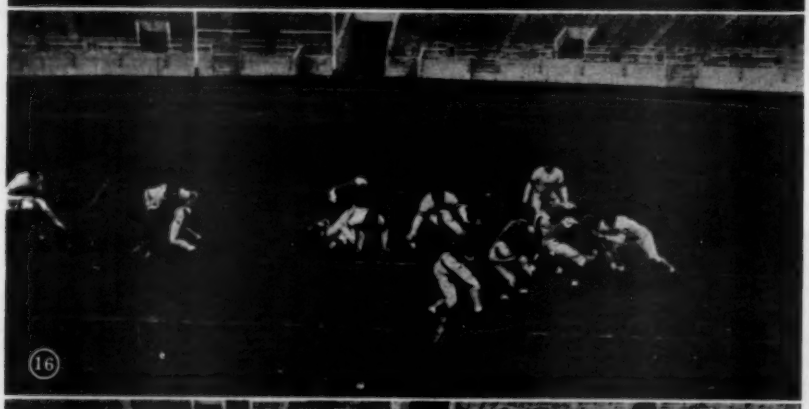

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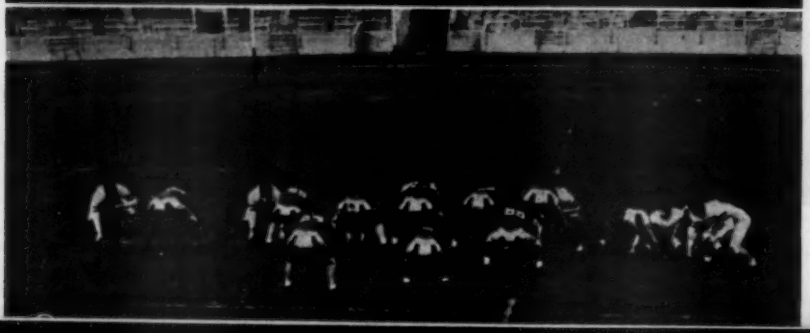

of scrimmage until the offensive attack develops into a certain sector of the defensive line. Then the line-backers commit themselves and meet the play head-on. They must protect themselves from trickery, for if they are not alert, they may be pulled into the line too soon by the deception of the play.

Defensive End Play

An end must be fast and clever on his feet. Quite often, too, he must recover quickly when drawn out of position. For that reason good balance performs an important part in the successful play of a defensive end.

A defensive end, although he has but one territory to cover, from his tackle line to the side line, is more of a co-operative player than any other man on the team. Furthermore, he must recognize the importance of the defensive halfback supporting to his outside, of the defensive line-backers supporting to his inside, and also of his tackle after he has played his inside territory.

The most effective way to teach defensive ends is through the use of a diagram that can be applied to any formation, for an end must have a clear picture of what is expected of him after the ball is snapped.

In Diagram 5 we saw a line drawn through the defensive tackle which is called the "tackle line," and back of the offensive line is the "blocking line" or the "traveling lane." This is the path used by the offensive linemen when running interference. Illustration 21, taken from the film of a Western Conference game, shows clearly where the blocking line is. A defensive end must visualize the intersection of this imaginary tackle line and blocking line to play his position effectively. On the line of scrimmage he must hold his stance with his inside foot back. Then, if he steps forward with his inside foot, and if the wing halfback goes into a turn-out block, he cannot tie up the end's outside leg.

Then, too, the defensive end plays just far enough away from his defensive tackle so that it makes it difficult for the offensive wing halfback to get a turn-out block on him. Refer to Illustration 13. Here you have the stance of a defensive left end (in white uniform) with his inside leg back and facing inward. For the first duty of a defensive end is to prevent the wing halfback from setting a block to his outside. Therefore, if the wing halfback turns out, the end must stop charging and play him. If he blocks back on the defensive tackle, the end must give support to his tackle line.

It does not make much difference whether the defensive end holds a crouching or a standing position. He should use the position that seems more natural for him. It should be remembered, however,

that the three-point stance is the more mobile.

Illustration 14 shows the offensive right wing halfback going into a turn-out block on the defensive left end. Notice here that the end stops charging and makes his defensive play on the wing halfback. This keeps the defensive end from supporting to his tackle line, but in this case he is playing correctly to prevent a sweep. Observe also that the outside foot of the defensive end is back, making it difficult for the halfback to get a flanking block.

Again, when the wing halfback does not turn out on the defensive end, the latter must support to the intersection of the tackle and blocking lines. Then, if the ball-carrier goes inside his defensive tackle, the end does not leave his tackle line until he is certain that the ball-carrier has reached the line of scrimmage. For the responsibility of a defensive end on a play of this type is a fake buck into the line that later develops into a lateral pass to a back or end who is coming around from the opposite side.

Illustration 15 shows the play of a defensive end who did not support to the tackle line, leaving an opening between him and his defensive tackle.

Illustration 16 shows the defensive left end supporting to his tackle line. The defensive tackle is hurried in this picture but is holding his territory, making a pile-up which the defensive end is using effectively in playing his inside.

When the defensive end reaches the tackle line, he must be low, with his inside foot extended. He uses bent arms to ward off blockers, keeping them from getting to his body. What is more, he gives ground grudgingly, and above everything else, he keeps his balance. In fact, the stance and balance that the end can hold after he reaches the tackle line will determine his effective force in the play.

On sweep plays the defensive end, as he reaches the tackle line, must locate the ball-carrier and slide toward the side line, keeping the ball-carrier directly in front of him. In giving ground, the end should absorb blocking, stripping the ball-carrier of his interference. In fact, he should never give ground without resistance as he works toward the side line to avoid a sweep.

Illustration 17 shows that a defensive tackle, outflanked by a wing halfback, has two offensive blockers to move him in or out. If the defensive tackle can hold his ground and not be moved backward or laterally, he is giving all the help that the defensive end can expect. The defensive tackle, however, should also try for a few feet of penetration and then play his inside. That will make him a defensive tackle plus.

In Illustration 18, we have the position of a defensive end at the tackle line before the blockers have made contact.

(*Continued on page* 54)

18

19

20

21

The Athletic Coach and the Community Health Program

By Joseph W. Hartley
High School, Waterman, Illinois

FOLLOWING his graduation from Northwest Missouri State Teachers College at Maryville, Missouri, Mr. Hartley coached at Victoria, Illinois, High School. Last year, his second at Waterman, his basketball team was one of the eight finalists in the Illinois State Basketball Tournament.

Because of the increased interest coaches are taking in the health programs in their schools and communities, this article should be well received.

THE athletic coach is vitally concerned with the community health program. The community health program, to a large extent, determines the coach's success or failure. In a healthy community where the program is active and progressive, the coach will have more robust boys, fewer absences from practice sessions on account of illness, and fewer boys coming down with a communicable disease when an important contest is approaching. I do not mean that an athletic coach should measure health in terms of success or failure at athletic events, but community health eventually may have a great deal to do with the success of athletic teams.

The coach cannot crawl into a narrow shell and be concerned with the health of his squad members only. The health of the entire community determines the health of his squad sooner or later. His chief contribution to community health will be the hygienic standards that he develops in the boys with whom he comes in contact. These boys are part of the community and, after graduation, they become its leaders. The hygienic standards developed in these future leaders by the coach will play an important role in the community health program. This need not be his only contribution, as we shall see later. He should always be ready to co-operate with school and community health officers. He should promote health education by agitation and legislation, quietly and effectively in a manner that will get results.

Athletics today are concerned with the whole scope of the student, his health for twenty-four hours a day, that is, the building of a healthy body and healthy attitudes to insure his chances of a better and longer life. The coach must understand health education; otherwise, he is a liability to the school and community, since he may recommend practices which seriously interfere with the normal growth and development of the boys. The very nature of the coach's work gives him a closer insight into the needs, abilities, and temperament of students than that afforded other teachers in the school. He should have a background rich in biological science, physical diagnosis, mental and social hygiene, nutrition and community sanitation, as well as in athletic activities. Such a coach is admirably equipped to render efficient service in the health education of a community and school.

If the athletic coach does his work in school according to accepted social and hygienic standards, he is playing an important role in the community health program. There are many routine health practices after which the athletic coach must always look.

Care of the Physical Plant

At the beginning of the year the physical plant should be checked thoroughly. It should be kept clean. The shower facilities should be kept in good repair, the floors and walls should be painted; they should be properly disinfected at least once a week during the school year to keep down foot infections and skin diseases. The dressing rooms should be made as cheerful as possible, and the boys should be taught their responsibilities in keeping them clean and orderly. Good drying facilities for the dressing rooms should be provided; if the coach finds himself without such facilities, he, with the aid of the boys, can provide them. Such facilities may be easily built.

A Thorough Physical Examination Necessary

Every boy competing in athletics should have a thorough physical examination at the beginning of the year. The coach must assume the responsibility for having this done. The examination should be thorough. The boy's heart, blood pressure, feet and lungs should be checked. Defects of these organs should exclude the boy from competition. Hernia, communicable diseases, social diseases, anemia, if present in the boy's condition should exclude him from competition. The examination should also include the following items:

1. Individual hearing tests.
2. Palpitation of cervical glands.
3. Accurate measurement of distance in hearing.
4. Posture inspection with a lateral view of the whole child.
5. Throat inspection with a tongue depressor.
6. Inspection of conjunctiva by inversion of the lower lids.
7. Clothing removed to the waist.
8. Inspection of spine to the waist.

Whenever a boy is ill, he should be checked again before returning to competition. This is a precaution that protects the coach in two ways. It will prevent the return of a boy at a date when his illness may still be in a contagious stage, and a check on the heart, always needed after any illness, will relieve the coach of any responsibility in case of a collapse.

It would be a good thing if the coach would try to persuade the head of the school to provide a program, whereby every child in school would be given a thorough physical examination at the beginning of each year. If this program could be expanded to include a dental examination, aiming toward the correction of dental effects, it would be a more complete program. Many such programs have been worked out by the Parent-Teacher Associations in various communities. Regardless of how it is accomplished, the coach should be a promoter and a leader in such a program. If such a program were carried out, all students who participate in physical education classes, or who might come under a coach's intramural program, would be protected and checked. After all students are checked, the coach should head a program to see that physical defects brought to light by the physical examination are corrected, or that corrective measures are at least attempted. If the defects cannot be corrected in the regular physical education classes, the parents should be notified, and corrective measures outlined for the parents.

The coach should see that physical efficiency tests are given all students at least once a year. These will be useful in giving the student the kind of activity he needs, and through them the coach will be able to determine what boys are best fitted for the various sports and exercises. In this way he promotes good community and school health as well as good teams. All students in athletic competition and in intramural programs of competition should be classified properly, according to

physical measurement, and not according to classroom classifications.

The Care of Equipment

After seeing that the plant is properly prepared and taken care of, and the students examined and properly classified, the coach should look after the equipment. It should be thoroughly cleaned once a year, and as often thereafter as the need arises. The practice and playing equipment must be kept clean and free from contamination. The boys should be taught the proper care of their equipment. They should change socks and supporters daily, to prevent athlete's foot and gym itch. The boys must know that such things as neglect in changing socks, in drying the feet properly and thoroughly, or in not allowing the feet to perspire, will surely lead to athlete's foot, and they must know that a dirty supporter will irritate the skin and cause gym itch. All practice uniforms should be numbered, and the boys should never be allowed to exchange uniforms. This promotes skin infection and boils. "Wear your own clothes, and keep them clean" should be a firm and well-enforced rule. The drying facilities should be such that the clothes will dry in time for the next practice session or class. Putting on damp, sweaty clothes is uncomfortable for the boys and promotes colds and other inflammations. An epidemic of colds will wreck any athletic team. The coach must be firm in this rule of dry clothing. The boys should be taught the importance of clean towels; if possible, a towel service should be provided for the boys after showers; and they should be taught to turn their towels in every day for clean ones. Clean towels will prevent skin irritations and infections. All boys should be warned against getting their hair wet when taking showers, and, if they do wet their hair,

(Continued on page 51)

The Main Objective of Physical Education and Athletics

By Arthur L. Trester
Secretary, Indiana High School Athletic Association

AS announced last spring, it is the intention of the editor of this publication to print statements, from time to time, on the objectives and value of physical education and athletics. Mr. Trester stresses the physical side.

THERE are several minor objectives in the field of physical education and athletics but there is not more than one main objective. No one desires to minimize the values of varied skills in many games, excellence in a few games, the play spirit, high ideals of fair play, sportsmanship, wholesome fun, observance of rules and regulations, mental alertness, moral stamina, social mindedness, character training and emotional adjustments. All of these are desirable and are secured to some extent under proper direction and supervision in physical education and athletic activities. Other departments of the schools make valuable contributions to these ends, also. These values may be ranked differently by different individuals and some may be discarded or omitted entirely. There must be something, however, that ranks first without question when the work in physical education and athletics is measured.

It is the thesis of this article that the first and main objective in physical education and athletics is education or development of the physical.

It is true that values of various sorts may come by education *through* the physical but it seems to be urgent that increasing emphasis in physical education be placed on education and training *of* the physical. No one need apologize for the body or its training in the schools. No one needs to rank it above or below the mind. In fact, a consideration of the principle of the unity of the mind and the body will bring about a better relationship between the academic and physical work in our schools. When musical education is mentioned, we know that the emphasis is on music; when art education is mentioned, we know that the emphasis is on art; when any type of education is mentioned, we know that the emphasis is on that type of education, but for some unknown reason we have a habit of placing the emphasis in physical education not on the physical but on the mental, the moral, the social, the emotional, etc. There is no argument for leaving out these latter emphases, but there is plenty of argument for stressing the physical in education. It is high time that those interested in athletics and physical education occupy and busy themselves with the physical. The emphases on the mental, moral, social and emotional in physical education are all right but the emphasis on the physical is sufficient argument for the program in physical education and it is the one that should be stressed. Health knowledge, health attitudes, health appreciation, health habits and physical development are present and carry-over results that should be emphasized. These things are worth while in school days and thereafter.

The field to be plowed and cultivated by the teachers in physical education and athletics is the field of physical education and training. Of course, these teachers and coaches are obligated to so conduct their activities that the proper contributions will be made to the mental, moral, social and emotional make-up of the learner. The carry-over into after life in athletics and physical education is found, therefore, in the things that happen to the student who plays in school and the best preparation for any future life is to really live in the present. The building of organic vigor and power is the first and main objective of physical education including athletics.

Physical fitness, strength, endurance, organic vigor, stamina, ruggedness, robustness, motor skills and muscle co-ordination are basic in any program of physical education and athletics. Concomitant learnings are always present in such work and such learnings should be nourished and directed, but first things in physical education and athletics should not only come first but shou'd remain in first position in education. The fundamental idea here is that physical fitness is basic and will assist in the improvement of the academic work of the school and with the demands of society in a democratic scheme.

The mind and body are classified as a unity but even so it is the primary business of the program in physical education and athletics to give special emphasis to the development of the body. Those of us who are interested in physical education and athletics claim too much in listing the numerous objectives for our work and we accomplish too little in the field of physical fitness which we have pre-empted and failed to occupy with worth-while programs for all students. We are failing to plow our special field and have been trying to get credit for the work being done in other fields by other parties. There is enough opportunity for all departments of education so that duplication is not necessary in listing objectives or in program making.

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JOHN L. GRIFFITH, Editor

The Value of School and College Athletics in the Present Crisis

By

JOHN L. GRIFFITH

IV.

The Aftermath

WE have been discussing the value of school and college athletics in the present crisis because we believe that our schools and colleges are making a greater contribution to the civilization of our times than is generally realized. We have been attempting to pass on to the coaches of the country material which they may, if they wish, use as a means of showing the American people the value of the work in athletics that is being done by our educational institutions.

In this issue of the JOURNAL we wish to focus attention on the aftermath of the present world war and of the political revolution that has been taking place around the globe. This is a matter of concern to all of us and has a very proper place in a magazine devoted to school and college athletics.

Clearly we have been witnessing a revolution and while we have, perhaps, during the depression thought of it as an economic revolution, it is primarily a world-wide political revolution.

When people are sore distressed they frequently surrender their liberties in the hopes that some strong man or some group of strong men will bring order out of chaos and will make life easier for those who are suffering from the results of wars or depressions. When a people are strong and independent, especially in the democracies where they have learned the blessings of self-government, they may be expected to insist on the right to fight their own battles, to order their own lives and to manage their own property. When moral decay sets in, the people look to the state for all good things instead of looking to God as in normal times.

Eugene Lyons in his recent book, *The Red Decade*, speaking of some of the youth movements that have been in evidence in recent years, and especially those of the Communist Student Union in the American Youth Congress, writes, "The Communist strangle hold on youth movements has left a deep imprint on American life and thought. It is perhaps the strongest ingredient in that skepticism and disillusionment which is now making so many of our undergraduates indifferent to the fate of democracy. Thousands of those who are indoctrinated with Communist amoralism will help to shape our American life of tomorrow. Many of them are in places of strategic importance in our national life."

If it is true, as Mr. Lyons suggests, that there are, to any great extent, skepticism and disillusionment which are making many of our undergraduates indifferent to the fate of democracy, then serious thought should be given to the task of helping our young people find the right way.

Here is the place where the athletic men of the nation come in. They have always stressed the idea of competition, of respect for the rules, of loyalty to the team and the institution they represent. They have insisted that the athletes make sacrifices to the end that they may do their best, that they give the best that is in them at all times; and that they put forth their best efforts, not with the idea of pay, but because that is a sportsman's way of life. The coaches have taught their boys to finish the race even though they all know how little it matters if one, in the words of Grantland Rice "keeps pounding along to the end of the run."

We may be safe in saying that the athletes in the schools and colleges of this country, for the most part, are not among those who are skeptical or who have lost faith in our country or in the idea of self-government. These things being true, our army of 50,000 men and women coaches, athletic directors and instructors can through their games and through their contact with the young people of the country, counteract the destructive work that has been done by those who have insisted that this is not the best country in the world, that the poor boy does not have a chance, that the men who live within their income are holding back those who have not lived within their incomes but who feel that they ought to be in high places in industry. On the other hand, our group can, if it will, prove to boys and girls in the educational institutions that this is the greatest country in the world, that it is and always has been a land of opportunity, that they should think of their country as an altar on which to lay a sacrifice and not a crib out of which to feed, and, in short, that when they play their games they should play for an ideal.

Men like Alonzo Stagg, Fielding Yost, Howard Jones, Harry Hughes, Knute Rockne, Harry Hillman, and scores of others have been known, not so much because they were successful coaches, but be-

cause they stood for the finest traditions of sport and because they, by their acts, preached Americanism.

This fourth chapter is presented to the coaches in the schools and colleges, not as a preachment, but with the idea of suggesting how sports may be used to the glory of our country.

Industry and Sports

THE following editorial by Dr. Victor G. Heiser of the National Association of Manufacturers, we present with a great deal of pleasure. First, Dr. Heiser is a gentleman whose opinions are valuable; second, he represents an organization of renown; and third, his philosophy coincides with the philosophy we have been attempting to expound for twenty years.

It is a truism that a football team needs a hard schedule—stiff competition—if it is to develop to its full capacities.

We all know of schools which, having failed year after year to develop either significant teams or outstanding individual players, have risen rapidly when they have met new and powerful rivals. Facing the challenge of exceptionally strong opponents has *made* many a team, and many a player.

Competition is the lifeblood of athletics. It is also the lifeblood of business and industry in America. It is the dominant distinguishing characteristic of the private enterprise system, and the open secret of success of the American way of life, which we are arming to defend today.

There are many parallels between our American business system and the playing field. Individual initiative, combined with good teamwork, is essential to both. In our daily lives, government, in a sense, is the umpire, or referee. Every thinking American wants to make sure that this pattern of American life is preserved; that it is not permanently altered by the vast number of new rules and restrictions which come with production for defense.

Everyone recognizes that an emergency makes new rules and restrictions necessary, but the basic principles of the private enterprise system which have given this country supremacy in producing for peace high standards of living can also give it supremacy in the production of armaments. In fact, the record shows that free American industry has already outstripped Hitler, with his much vaunted regimented economy, in many phases of armament production, and Hitler has been at it since 1935, whereas America's big program was not launched until 1940.

The defense emergency is a challenge to produce armaments faster and better than they were ever produced before, and it is an opportunity to demonstrate the superiority of free private enterprise over every other economic system in the world.

Industry must not only out-perform the rest of the world, but we must see to it that all America understands why this performance is possible, and why this country has the most widespread distribution of the comforts and conveniences of life ever known. Interpreting our industrial system in terms of the sports which every American enjoys, contributes to a better understanding of it and of the way of life we are arming to defend.

The Tax on Sporting Goods

THAT a tax has been imposed by Congress on sporting goods is known by all the school and college athletic men. In case, however, some have overlooked the announcements in the press, we wish to advise the coaches, principals and others that the Revenue Bill for 1941 has been passed by the Senate and the House and signed by the President.

We, of course, are particularly interested in the tax imposed on baseball, softball, football, basketball, tennis and golf equipment. This tax means that the consumers of these goods are going to have to pay a price at least 10 per cent higher than they have been accustomed to pay.

We are all desirous of helping the government in its defense effort and the schools and colleges especially may be counted on to do their full share.

We have felt that a tax on equipment used by our boys as a means of getting in shape for the burdens which they must carry as officers and privates in the military establishment should not be imposed. The government, however, has decreed otherwise and we must accept the burden cheerfully. One reason why we had hoped that Congress would not impose the tax on athletic goods is because it would cost practically as much to collect the tax as it would amount to. If we eliminate golf, the tax on softball, hardball, football, basketball and tennis equipment is not great.

Athletics for all

FOLLOWING the last world war, the slogan "Athletics for All" was adopted by a good many of our educational institutions. Those who advanced arguments in support of the contention that we should provide athletics for all generally reasoned that, if athletics were good for the boys who played on the inter-institutional teams, then more boys ought to be given athletic training. Much has been accomplished along this line in the last twenty-two years. More needs to be done.

If, however, your institution does not see fit to make physical training compulsory, all who are engaged in physical work of any sort can, and, may we say, should do everything possible by way of giving every boy who is able to engage in any form of physical activity, training that will help fit him for whatever lies ahead.

Let it not be said that the school and college men and women whose duty it is to serve the physical needs of the young people of this country by and through their school and college programs failed in this critical time.

Football Coaches! Teach Them Do Not Merely Tell Them

By William Landis
Industrial High School, Hershey, Pennsylvania

AS the author of the article, Making High School Football Profitable and Enjoyable, Mr. Landis will be remembered by many readers of this publication. The emphasis he puts upon teaching and demonstration in this article is another very worth-while suggestion.

FROM my own experience in coaching, from conversations with other coaches, and from observations of football practice sessions as conducted by different coaches, I have come to the conclusion that there is something more to be said concerning teaching technique in football coaching.

Many times we hear the plea that "breaks" decide the game. If we were to go a bit further into an analysis of "breaks," often we would find that just as "breaks" determine the outcome of many games, so does teaching technique often decide the "breaks." Oftentimes, the apparent bad "breaks" are, in reality, the results of the use of poor judgment or insufficient skill on the part of players, faults which more careful teaching technique in coaching could remedy. For example, the complexion of one of our major intersectional games last year was changed decisively, when the safety man was downed in his tracks after catching a punt which should have been allowed to roll into the end zone. At the time this seemed like an unfortunate "break," but exercise of better judgment, gained only through actual practice in this type of situation, would have enabled this player automatically to do the correct thing under the stress of actual game conditions.

Coaching Embraces Teaching

One of the fundamental tenets in all good teaching, whether it be in athletic coaching or in any other learning situation, is that the student learns to do by doing. I have no doubt that the safety man mentioned above was told often to let punts roll into the end zone, but I doubt that he was given many opportunities to stand in front of his own end zone and have someone punt to him, thus learning to judge effectively which punts would roll into the end zone and which punts should be caught. Probably one would need to hunt quite extensively for a coach who has not told his safety men this important item, but seldom have I seen coaches teaching this skill by giving safety men adequate opportunities to develop the necessary judgment and skill. There is a reason for this. Because situations like this arise comparatively infrequently, and because few men are affected when they occur, a coach cannot justify giving as much time and attention to these items as he can to more fundamental requisites, but if a "break" like this can be important enough, practically to lose a game, certainly it justifies more time and attention than it gets from mere telling.

The purpose of this article is to develop an appreciation of good teaching technique in football coaching and to cite a few situations in which teaching seems to be neglected for telling. It is hoped that the ideas found here may help coaches teach those things which they now tell their players, or possibly help them teach more effectively those things which are already taught. Telling the football player what to do and how to do it is a very essential element in his learning, but, like making contact in a tackle, it is only the beginning. Telling a player what to do is no assurance that he will or can do his assignment under exacting game conditions. The player must be given practice opportunities to *do* the things that the coach expects from him under conditions which most nearly approximate actual game conditions.

Often have we heard the coach's familiar moan, "But I told him to etc., etc." Through my mind usually runs this rejoinder, "That's it, you *told* him, but did you *teach* him?"

A Few Suggestions

As mentioned previously, do not be satisfied with merely telling your safety men not to catch punts which will roll into the end zone. Teach them how to judge which punts to catch and which ones to let roll, by placing them near the end zone, by having a punter kick to them, and, under these conditions, by helping them develop the necessary judgment and skill.

Do not tell your punters to kick out of bounds, when there is a shifty safety man returning punts. Teach them how to kick out of bounds by having them practice kicking out of bounds until the necessary skill is developed. Placing headgears for markers along the side line is useful in helping teach kickers how to place their punts. While teaching kicking out of bounds, you should remember to teach the players to kick to the leeward side, if wind conditions and the kicker's position on the field justify this type of kicking.

Do not be satisfied with telling your safety men to signal for a fair catch on short high kicks. Teach them this point by having them signal for a fair catch on all short high punts during practice sessions and punting drills.

Do not tell your players that, on defense, they should always try to maneuver the ball-carrier toward the side line so that he will have only one direction to go. Teach them this skill by giving them plenty of practice in drills along this line. At the same time, teach the ball-carriers to cut back of defensive men before being run out of bounds.

Do not be content with telling your boys about the occasional, but ever-dangerous "sleeper" play which might be used. Teach them to be on the lookout, by pulling sleeper plays in their practice drills and scrimmages.

Do not be content with telling your signal callers to send plays at defensive men out of position. Teach them by intentionally playing defensive men out of position during practice sessions, and then see whether or not your signal callers take intelligent advantage of the situations presented.

Do not be content with giving your team countless suggestions concerning rainy-day tactics and then always practice in the gymnasium or fieldhouse when bad weather hits you. Occasionally utilize a rainy day for an outside practice session so that you can teach rather than tell.

Do not be satisfied with telling your pass receivers to get free from clinging defensive men, but give them drills designed to teach them how to do so. Teach your pass receivers a change of pace, single and double feints, the pivot, and the turn-about devices rather than merely tell them to get free so they can receive passes. Incidentally the October, 1940 issue of The Athletic Journal contains two very helpful articles for passers and pass receivers.

The job of captain, with all its possible ramifications, is at best a difficult position on the football team. The recent tendency toward appointing acting captains adds to the difficulties. While it is impossible to anticipate effectively all the

(Continued on page 50)

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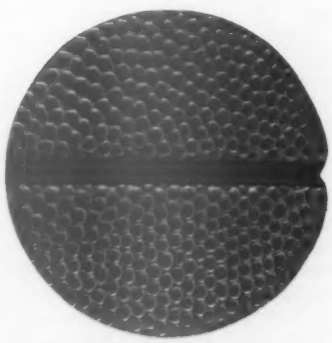

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SPALDING

SETS THE PACE IN SPORTS

BASKETBALL EQUIPMENT

Methods and Techniques of Coaching Basketball

By Joseph G. Daher

Basketball Coach, Morris Harvey College, Charleston, W. Va.

THE most important factor in coaching basketball is naturally simplicity. This applies to college, as well as to high school and grammar school basketball. The game requires, of both coaches and players, unlimited patience and time in perfecting even the simplest fundamentals.

At the very outset, to the student teachers and coaches, the method of an activity seems very important. The hundreds of young coaches gathered every summer in the courses offered by athletic coaches give every indication of their main purpose. They watch every procedure that seems to indicate method and their questions are precisely of the following character: How do you have the guards play in a zone-defense? How do you teach a boy to pivot-shoot? How do you develop team spirit?

Method has always held an important place in the coaching of sports. Successful coaches have been noted chiefly for their contribution in method rather than in content. While it is practically impossible to separate what is taught from the way of teaching it, still the method may be defined and described for the purpose set forth in this article.

The Variety of Learnings

The varying aspects of method are indicated by the variety of learnings that may take place in an activity such as basketball. These learnings may be classified and discussed as follows:

1. *The Technical Learnings:* In learning how to shoot a set-shot, the technical learnings are very prominent. There are involved the stance, how to hold the ball, the position of the arms in the follow-through, the most desirable shooting arc, and numerous other points. Continued technical learnings in basketball comprise the best ways to dribble, to foul-shoot, to make and receive passes, all the techniques of offensive and defensive play. Here, then, is a great body of learnings that one acquires in learning basketball, and the learning of these skills is essential to success in playing basketball.

2. *Associated Learnings:* In addition to the technical points of individual and team play, the athlete learns many things intimately associated with the game. He learns ways to increase strength, what foods to eat in training for the sport, what habits and practices to avoid in the maintenance of efficiency, and the various laws of practical hygiene. There is then a great body of learnings in this group which may be acquired in basketball and the learning of these is often vital to success in play. Too frequently, the athlete is unaware of the importance of these learnings and relies unduly upon technical skill alone. Condition, however, is essential in all athletic performances.

3. *Concomitant Learnings:* In playing basketball, or in any motor activity for that matter, one learns attitudes toward the activity, attitudes toward one's companions, one's coach, and one's opponents. These learnings are in many respects more fundamental than the former two because they are attitudes which tend to function in later life. The methods for teaching attitudes are not so well developed as the methods for teaching technical skills, and, hence, coaches pay less attention to the former in comparison with the latter. Nevertheless, players are in a strategic position because they can form attitudes themselves without definite instruction from the coach. The way in which the sport is carried on, however, is a very important factor in shaping the attitudes of the players who participate.

It is obvious, therefore, that methods may be employed to secure, not only a particular motor performance, but also related practical knowledge and significant attitudes and appreciations.

The Correct Use of Drill

The secret of good basketball coaching is the correct use of drill in the fundamental movements, at the proper moments, and for an adequate length of time. The golf professional teaching the "duffer" is a good example; the teacher is one who knows how and the "duffer" is one who wants to learn. So the "pro" makes the "duffer" drill for a long period of time on one shot, keeping an eye on him, making little suggestions and changes until the swing comes smoothly and efficiently. One lesson is usually not enough for, when the "duffer" is left to himself, he will revert to tight muscles, fight the ball, move his head, bend the left elbow, and change his stance. But given an individual who wants to learn, drill is the way out. The coach should teach as though he, too, were paid ten dollars per lesson per pupil, and as though his job depended on his delivering the goods. Many coaches fail to do a proper coaching job because they know neither the value and function of drill, nor the proper execution of the succession of movements that exist in the playing of basketball.

Drill will provide exercise, plenty of it, and will also discipline the player. There is nothing that will produce perspiration, increase respiration and circulation as quickly as dribbling down the basketball court. The discipline that results is not self-discipline rather than obedience to some external order. The chief function of drill, however, is not the above but that of habit formation.

Habits consist of establishing bonds in the nervous system between the sensory field of situations and the motor responses. In any complex drill there are various levels of habits in which the fundamental skills are fused into larger ones and these in turn into still larger ones. Thus, the basketball player using many skills thinks only of helping to work the ball down the floor to the basket for a goal. In acquiring this special ability of playing basketball, the thinking has followed closely each detail of every skill involved, while it was being learned, until it became automatic or a habit and needed no more thought. The attention of the player is now focused on the next higher skill, one after another, until he has reached his goal. The coach should then initiate much review and repetition of the final form used in the playing of the game.

In drilling players, the coach should be well aware of how the players are reacting to the drill. There should be a feeling of satisfaction and an expression of accomplishment evident among the players. A number of mistakes may be made in this phase of coaching. The drill may not fit the program at this stage of its progression; it may lack meaning; it may be more prolonged than necessary; fatigue may be present; or the players may have already learned the skill and are therefore bored by it.

In order to get the right attitude toward drill, the coach should introduce it properly by developing a feeling of desirability and acceptance. Rather than saying, "Now we will drill on this for ten minutes," the coach should say, "Let me show you how to do that; now watch me carefully. The ball must be held so;

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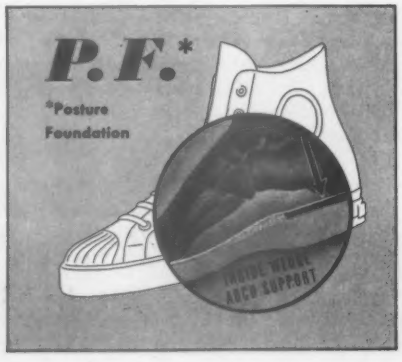

stand this way; the arms swing so and the follow-through is obtained by doing so and so (the coach demonstrating). Now try it. That's it. Do it again. Good. Now practice that for a while." Such technique may be applied to group instruction as well as to the coaching of an individual.

Since the methods and techniques of coaching basketball hinge on the teaching of fundamentals a list of units in the order of their importance should be considered. Only a general outline will be presented here.

Unit One: Introduction:
1. History and development of basketball.
2. Present status of basketball.
3. Reasons for including basketball in the physical education curriculum.

Unit Two: The Rules of the Game:
1. The object of the game.
2. Playing area and the players.
3. Court equipment.
4. The game itself.

Unit Three: Catching and Passing:
1. Catching:
   - A. Position of the eyes, hands, and fingers.
   - B. Position of the feet.
2. Passing:
   - A. Common Passes:
     1. Two-hand chest pass.
     2. Two-hand shoulder pass.
     3. Two-hand shovel pass.
     4. Two-hand bounce pass.
     5. The one-hand bounce pass.
     6. The hook-pass.
   - B. Uncommon Passes:
     1. One-hand underhand flip pass.
     2. One-hand backhand flip pass.
     3. One-hand sideward push pass.
     4. One and two-hand top passes.
     5. Roll pass.
3. General advice on catching and passing.

Unit Four: Shooting:
1. Floor shots; various types.
2. Foul shots; various types.
3. Shooting versus concentration.
4. General advice on shooting.

Unit Five: Dribbling:
1. General uses of dribbling.
2. Various types of dribbling.
3. Individual strategy hints.
4. General advice on dribbling.

Unit Six: Pivoting:
1. General uses of pivoting.
2. Various types of pivots.
3. Recommended executions.
4. General advice on pivoting.

Unit Seven: Faking:
1. Various types of fakes:
   - A. The ball, body, eyes, arms, or feet, or any combination of these factors.

Unit Eight: Guarding:
1. Individual guarding form.
2. Situation guarding.
3. General advice on individual guarding.

Unit Nine: Getting Possession of the Ball:
1. Following shots: offensive and defensive.
2. Held balls.
3. Center taps.
4. Free balls.
5. General advice on getting possession of the ball.

In the coaching of basketball, proficiency in the fundamental skills is essential. The skills are movements or acts which represent co-ordination. This ability is trained and hence the methods and techniques used are important if successful training is to be given.

There are three laws of learning that bear upon this subject:

1. The law of readiness says that the more ready a boy is to engage in basketball, the better he performs and the more satisfaction he has. The coach who is alive to ways and means to promote readiness for basketball will find greater success than the one who ignores it. Basketball coaches should examine their methods and techniques of endurance exercises, developing fighting spirit and other practices which make some players unready.

2. The law of exercise says that the use of any set of neuron connections strengthens them while the disuse of them weakens them. This law implies that one can attain skill only by actually doing the particular activity one is trying to learn. The school that employs a star basketball player as a coach, when clearly he has no qualifications as a teacher, must believe that by some magic his demonstrations will make his pupils skillful. Thousands follow Jones around the links and Tilden to the courts, but they gain power for themselves only as they drill themselves.

A skill is really learned when it becomes automatic, hence, the coach must seek to provide such opportunities necessary for perfect performance. This law also emphasizes the importance of correct form. If the player practices on one form this week and another next week, the techniques related to the correct pattern are not being strengthened. This law suggests, then, that all basketball coaches should know the correct form in all its details, and that they teach their pupils such form.

3. The law of effect says that the player, who finds satisfaction in responding in a particular way, tends to repeat the experience, and if he finds dissatisfaction, he tends to avoid it. The coach should help the beginner accomplish something to achieve some progress, so that satisfaction may occur. Good form is vital to learning in basketball, because if poor form is used and as effort continues and progress lags, the player becomes dissatisfied and discouraged.

This law also concerns itself with competition. The beginner matched against the expert will find little satisfaction. Competition against those of one's own ability improves the performance.

Praise and censure should be offered by the coach in relation to the law of effect. The coach may offer praise to increase the satisfaction in connection with the proper act and he may censure to increase the dissatisfaction with the wrong act. The coach must be wise in the employment of these factors.

Basketball demands many of the qualities which we associate with proficiency in athletics, co-ordination, speed, strength, endurance, intelligence, and spirit. Coaches of basketball vary in their successes and for various reasons.

Regardless of the reasons that might be mentioned, it is important to state that their lack of success is often due to failure to recognize the essentials of the sport. One coach who failed miserably was an exponent of speed. His constant remark to the squad was "whip it up." Another coach believed in the necessity for strength and endurance. In addition to the basketball practice, he drove the squad through vigorous calisthenics and exhausting runs around the court. His teams were invariably dead on their feet. Another coach centered his efforts on developing a fighting spirit and by many devices unworthy of a gentleman and sportsman sought to promote this quality in players.

In all competitive sports it is important not to overwork the player. The coach using the best methods and techniques will arrange for sufficient rest between practices and avoid exhaustion during practices.

In conclusion, the methods and techniques of coaching basketball cannot be logically discussed without mention of the fundamentals and their essential skills or details. The players should be informed of their progress or short-comings from time to time by letters or verbal means.

It should be remembered here that fundamentals include not only the passing, receiving, shooting, dribbling, pivoting, and strategy skills, but also the factors of conditioning, development of interest and readiness, and the building of competitive spirit.

The coach must keep in mind at all times that teaching in basketball is related to the laws of learning and the methods and techniques to be used will determine in a large part the major outcomes. Individuals still learn by doing, so the successful coach will eventually be the one who emphasizes the minute fundamentals at the very outset and, in addition, reiterates frequently the importance of them while working along advanced individual and team techniques.

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IT PAYS TO PLAY

You Cannot Stand in the Way of Progress

By H. V. Porter
Secretary, National Federation of State High School Athletic Association

A SHORT time ago, the writer attended a football meeting in Minnesota. Consideration of basketball problems was not one of the purposes of the meeting, but the topic of conversation soon turned to the fan-shaped backboard, and, on account of the great interest in the matter, the executive officer announced that the fan-shaped backboard would be used in the Minnesota tournaments during the current season. A few nights later, there was a meeting in the high school at Boise, Idaho. The athletic director announced that the new fan-shaped backboards are being installed. Today, a letter from the basketball coach at University High School at Urbana, Illinois, announces that the school is joining the hundreds of other Illinois high schools in the installation of the fan-shaped backboard. These occurrences are representative of the progress which is being made in the transition.

The states of Missouri, Kansas, Illinois, Iowa, Nebraska, Minnesota, Oklahoma, Utah, Oregon, South Dakota and Wyoming have already announced the use of the fan-shaped backboard in basketball tournaments, including the state finals. In North Dakota, the coaches have recommended that the boards be used, and, in other states, similar action is being favorably considered.

Last year, when the fan-shaped backboards were merely legalized and before they were recognizd in the basketball rules as the standard official backboard, the records of athletic equipment manufacturers indicate that approximately 5000 pairs of such boards were installed. This is phenomenal in view of the fact that this represented a rather radical change from tradition and occurred during a period when there was still some doubt as to whether backboards of the future would be of the fan-shaped type. The change was made not only by the high schools but by other groups as well. The Missouri Valley Conference is one of the most widely known university groups in the nation, and they played the entire season with the fan-shaped backboards. Other colleges and Y. M. C. A. groups used them experimentally or for conference games. Innumerable schools manufactured these boards in their own manual training departments. This unusual rapid acceptance of the new type board could have resulted, only because coaches and contest managers who are students of the game of basketball recognized their value in eliminating the waste space on the larger rectangular board.

TO answer the inquiries coming to us regarding the fan-shaped backboard, we have asked Mr. Porter, Secretary of the National Federation of State High School Athletic Associations to clarify some of the points now being discussed. Mr. Porter has long been an authority on equipment and rules interpretation in basketball. He is always working for the good of the game of basketball.

Rip Van Winkle Walks Again

With such rapid acceptance of the board which was first legalized and later accepted as the standard official backboard by the National Basketball Committee, there seems to be no question about the ultimate 100 per cent use of it. There is no question relative to the matter in the minds of a great majority of basketball men. At the end of last season, a nationally circulated questionnaire, sponsored by the National Basketball Committee, showed a vote of more than five to one in favor of the use of the new board. The vote in the National Basketball Committee of the United States and Canada was 14 to 1.

It would seem unnecessary to discuss the matter, except for a few statements from isolated groups who have petulantly threatened to boycott the fan-shaped board, and who, in some cases, have intimated that they will sponsor a revolution or secede from the union or devise a game of basketball exclusively for their own use. A press story released some time ago through one of the national news agencies reports action of this kind and states some of the alleged reasons. It is claimed that the fan-shaped backboard was "forced down the throats" of the groups in question and that they knew nothing about it until the National Rules Committee took a sudden notion to legalize it. It is further claimed that this item can be made only by one or two manufacturers who have patents on the processes and who are allegedly well on the road toward becoming millionaires because of the great number of articles which have been or will be sold. And, finally, it is claimed that the schools and institutions are being burdened with extra costs because of the new article.

These claims are so absurd that it is probably wasted effort to comment upon them. If any student of basketball or any basketball group knew nothing of the efforts over the last several years to determine the waste space on the old type backboard and to find the most desirable size and shape, it leads one to believe that Rip Van Winkle was not the only one who slept for twenty years in the Catskill Mountains. One is led to wonder where such individuals were during the several years, when articles relative to the desirability of the smaller type backboard were appearing in the various state high school athletic association magazines and in athletic magazines with a national circulation. Where were such individuals when thousands of high schools throughout the country were charting field goal attempts in games and tournaments to determine which part of the backboard is actually used and which part is actually needed for banking purposes? Such nation-wide experimentation was being sponsored as early as 1936 and there were widely published reports on such work in magazines such as the Illinois High School Athlete in 1938. Where were such individuals when several dozen pairs of the smaller backboards of various sizes and shapes were being made in the manual training departments of the schools and used experimentally, and when, at a later date, several thousand pairs were being installed for actual game use? Obviously, any claim that the new type board came in as a sudden notion and was "crammed down the throats" of the basketball profession is beyond the comprehension of the many men who were devoting time and effort to experimentation and study of the problem. The claim that the new type backboard can be manufactured only by one or two equipment manufacturers is equally absurd and with no foundation in fact. No company has any exclusive patent on the making of the new type backboard. Many companies are making it. The cost of the new backboard is considerably less than the cost of the old product and it is considerably more durable than the old. Claims of exorbitant profits by the manufacturers on

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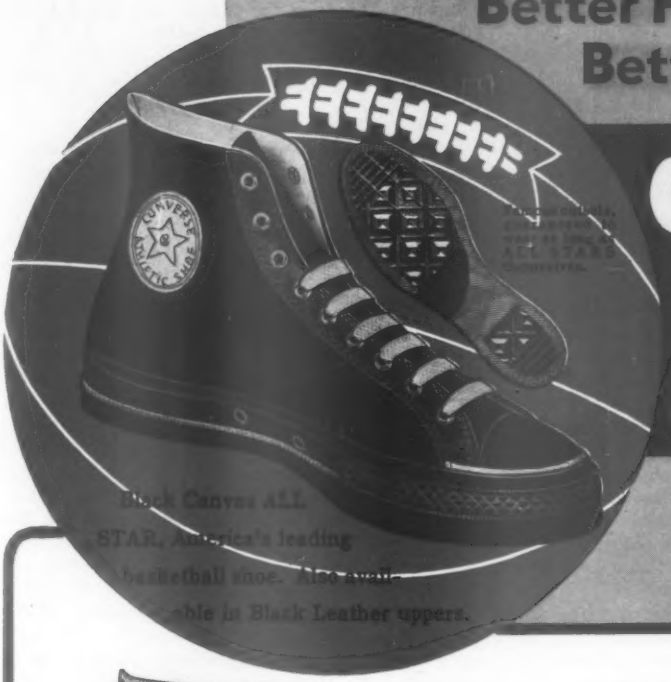

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this product could be made only by men who have no understanding of the manner in which this article has developed nor of the supervision of the school organizations which would have prevented exorbitant profits, even if they had been possible, nor of the fine type of co-operation which the leading manufacturers gave the school organizations and the National Basketball Committee in producing trial products for experimental purposes and finally superior articles at a cost greatly below that of the related article of the old type.

Claims relative to additional costs which must be paid by schools and institutions on account of the new type backboard are misleading and erroneous. The facts are that the schools and other institutions are being greatly benefited from an economic standpoint through the introduction of these modern types of equipment. When the first steel backboard with the old area of twenty-four square feet was introduced, the cost was in the neighborhood of one hundred and fifty dollars. Even after production had been stepped up, the customary cost was still between seventy-five and one hundred dollars. Much of this cost had to be incurred because of the tendency of such a large surface to warp and twist. In addition to this, the heavy weight required a complicated type of bridgework for support. In contrast, the smaller type backboard has only 43 per cent of the surface, is stamped out of one piece of steel and requires only a fraction of the bracing apparatus and only a fraction of the bridgework which is necessary to support it. As a result, the new type backboards are being produced at a cost of less than half that of the larger boards. It does not take an expert mathematician to figure the saving to athletic departments during the next fifty years. As far as present transition is concerned, there is almost no basketball organization that cannot make use of an extra pair of backboards and the old boards need not be wasted when replaced with the new type. It does not take an expert economist to draw correct conclusions as to the relationship of the smaller backboard to school athletic economy.

Caudal Appendages, Tonsils and Backboards

In the paleolithic era of basketball the large backboard had a purpose. This need disappeared years ago. Originally the twelve inches of space below the basket ring were necessary, because the ring had to be anchored by long braces which extended approximately one foot below the ring level. Twenty years ago or more there were revolutionary developments in the construction of baskets. When a durable and satisfactory basket ring which no longer needed the long bracing rods below the ring was produced and when a similar type of ring from spring steel which required no extra braces was produced, the lower nine to twelve inches of the backboard became vestigial space and in the same class with the human caudal appendage, the appendix and the tonsils. Basketball men did not seem to wake up to this fact until twenty years later. Other changes in the game further contributed to causing the large backboard to become a rudimentary organ of the game. The great popularity of the game has resulted in the building of larger and larger gymnasiums and since there are only 76 to 86 feet between backboards, it is obvious that a large percentage of the seats must be behind the plane of the backboard. This has created a nuisance value for the extra corner and margin space which is not needed for banking purposes. Another change which influenced the matter was the introduction of the four-foot end space behind the backboard. When this was accepted, it automatically made desirable a reduction in the size of the backboard in order that the end space might be made of maximum use.

These developments made it inevitable that the waste backboard space go the way of other rudimentary organs. Such organs have outgrown their usefulness and the sooner they are eliminated, the better it is for the organism.

New Concept in Basketball

Basketball is not static. It is capable of continued growth and improvement. If the men in charge of the game are alert, they will make it keep pace with progress in related fields and industries. During recent years there has been a marked tendency on the part of students of the game to subject every department of it to scientific investigation to determine whether features of the game or equipment used in the game are retained merely because of tradition or because they meet present-day needs. There has been a steady movement toward the concept that every possible means should be taken to permit play to come to the basket from all directions and to relieve congestion directly in front.

Here are some of the steps in this direction:

1. The four-foot end space.
2. More rigid rules with respect to the pivot-post directly in front of the basket.
3. More rigid rules which limit the right of an offensive player to block or charge in making his drive for the basket.
4. Development of more rigid baskets and backboards which scatter the rebounds.
5. The adoption of bouncing standards in the ball so that a rebound of reasonable distance will be assured.
6. The smaller backboard.

These are all evidence of extensive experimentation and investigation and alertness on the part of the basketball men in all parts of the nation.

You Cannot Stand in the Way of Progress

Regardless of what any one individual or group of individuals may think with respect to the smaller backboard, it is here to stay. Progressive movements have a way of succeeding despite criticism and vituperation. There is plenty of evidence to indicate that this equipment factor has proven itself. If anyone should be in doubt relative to the matter, let him ask some of the thousands of basketball men who have had experience with it, George Edwards of Missouri University, Henry Iba of Oklahoma University, Eugene DeLacey, state championship coach at Dundee, Illinois, E. A. Thomas of Topeka, Kansas, O. L. Webb of Lincoln, Nebraska, Ross Anderson, president of the Illinois Basketball Committee, Archie Chadd of Anderson, Indiana, H. J. Swarts of the University of Pennsylvania, E. J. Hickox of the Springfield Massachusetts Y.M.C.A. College, F. C. Allen of the University of Kansas, Troy Walker of Portland, Oregon, or many others who have watched this movement develop and have experienced the benefits which come from this item of equipment.

Here is an excerpt from a recent issue of the Kansas Athlete: "In basketball, the four-foot end space, the molded type basketball and the fan-shaped backboards are evidence of real progress and there need be no fear of any action being taken to retard their use. Any attempt to do so would be in the same class as advocating return to hoop skirts, highwater pants, covered wagons and rubber collars."

The Illinois High School Athlete contains quotations from leading basketball men. Here are typical statements: "With the fan-shaped backboard, more use is made of the four-foot end space, the area in front of the basket is less congested, the court has a better appearance and the basket is now visible from almost every seat in our gymnasium."—A. G. Haussler, Athletic Director, Pekin, Illinois.

"The fan-shaped backboard was used in our state final tournaments and made a hit with both spectators and players."—Lyle Quinn, Des Moines, Iowa.

"The fan-shaped backboard has distinctly improved playing conditions on our floor and on every floor in this vicinity."—W. M. Runyon, Winchester, Illinois.

"The fan-shaped backboards were used in the tournaments in Wyoming and we would not return to the old type backboard under any consideration."—E. M. Thompson, Rock Springs, Wyoming.

"Use of the fan-shaped backboard dur-

(Continued on page 47)

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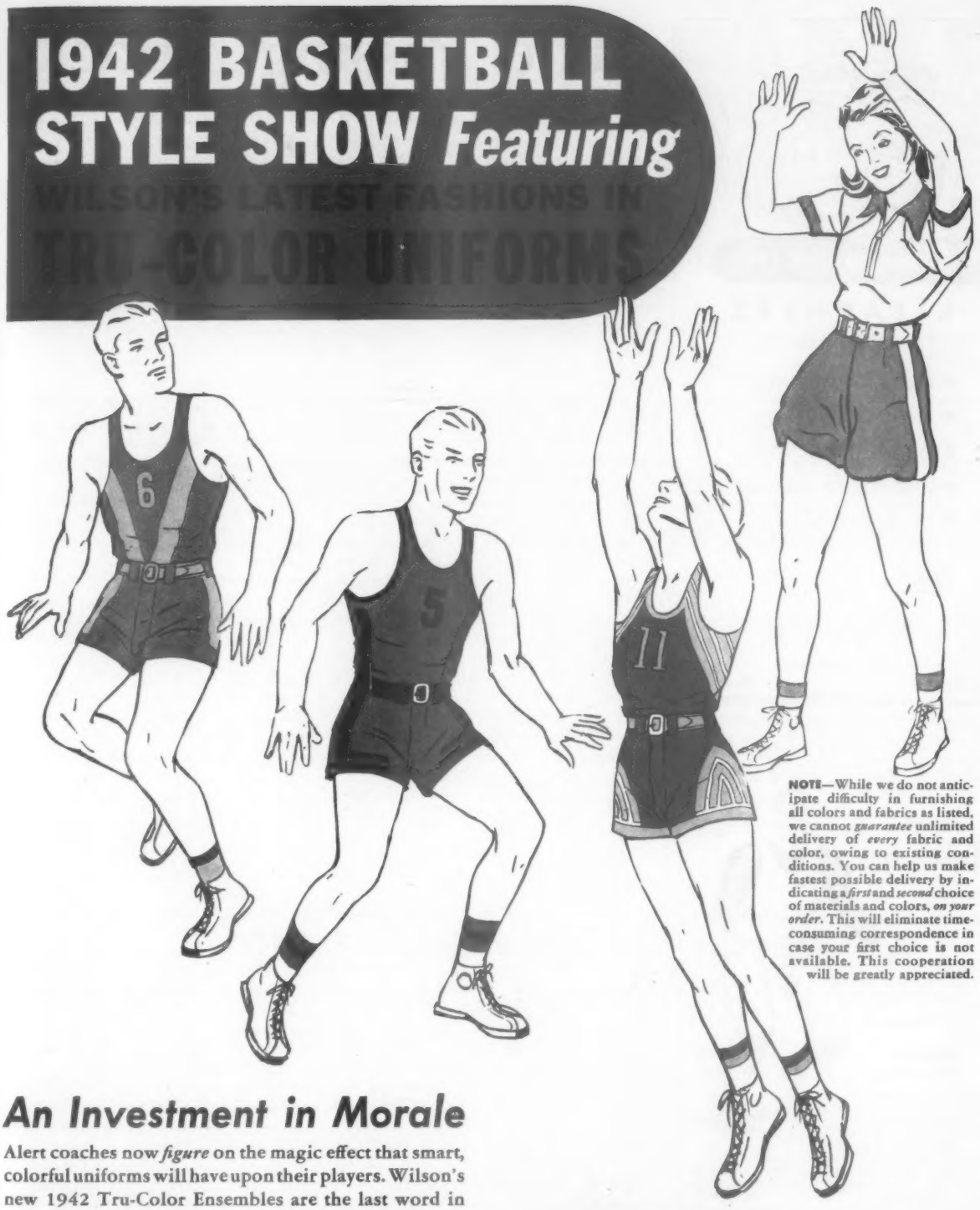

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The Passing Attack

By William W. Belew, Jr.

Burlington, North Carolina, High School

IN modern football the passing attack must be a strong supplement to the running attack. To catch passes and to run with them seem easy to the uninitiated, but require definite technique of execution when done under the hazards of the actual game.

Two methods of catching a pass will serve in most situations. The first of these, the over-the-shoulder method, may be used to catch any pass coming from the side or rear. The second will be used by the end only when called on to break toward his own goal line for the pass, or when the pass is mis-thrown and it is necessary for him to turn and take it while in a strained position.

In taking the pass over the shoulder, the first point for the end to remember is to keep his hands about nine inches apart and thoroughly relaxed. If the pass is coming from the right, the player extends the left hand to the fore and above the right, and it is this hand which will first break the force of the ball. To do this, the hand must be turned with the fingers pointing at a definite angle upward from the direction of the wrist and arm. The right hand, nearest the ball, is held below for a basket into which the ball will settle as the force of the throw is broken by the upper hand. The fingers of both hands should be well spread to form as large a base for the ball as possible without strain and resulting stiffening. If the elbows are kept within six or eight inches of each other during the catch, the hands will automatically assume the correct position and, at the same time, the chances of the ball falling back through the arms will be considerably lessened. To the intelligent boy, it will be apparent that the hands form a basket into which the ball sinks under its own force, without effort on the part of the receiver other than raising of the hands to position. Others will continue fighting the ball and driving it out the other side of the hands or batting it back in the direction from which it came because of stiff poker fingers. Look at the ball and let it fall into the hands, which will automatically move to position if the eye is kept on the ball.

This method may be used to handle any ball coming from the side at knee level or above the head. The procedure to catch a ball coming from the left would necessitate the right hand being advanced and the left hand serving as the basket to receive the ball after the force of the throw has been broken by the right hand. In both cases and in all cases, the eye must be on the ball until it settles into the hands and then until one point is placed under the armpit of the receiver and the other point firmly covered with extended fingers. Only then is the receiver ready to run. Many catches are ruined by failure of the receiver to get the ball firmly under control before starting up the field.

The end must learn another method of receiving the pass from a direct frontal direction. In this method the fingers should be spread with the backs of the hands toward the face of the receiver. The thumbs should be within an inch of each other, tip to tip, the tips of the index fingers being an equal distance apart. The hands should then be placed in such a position that the nose of the approaching ball will fit into the hole created by the spread thumbs and forefingers, with the hands relaxed so as to form a resting place for the ball as the force of the throw brings the fingers into contact with the sides of the ball. The force of the reception is supplied by the thrower and not by the receiver, whose hands remain supple and relaxed. To allow the hands to give with the force of the throw is, in this case, even more necessary than in other catches, since here the receiver is traveling in the direction opposite from that of the ball and stiff hands will send the ball rebounding at even faster speed than it arrived at point of contact. As in all other methods of reception, the eyes must be kept on the ball, until the ball is properly placed under the arm.

It will be noticed that both of these methods of receiving passes anticipate the pass being received at a level above the head of the receiver. Such passes are usually more sure of completion, harder to intercept and easier to catch than passes thrown at the waist, the knees, or the shoulders of the receiver. At the insistence of the end and the orders of the coach, the backs can be trained to throw ahead of the receiver to make him take the pass at a full run and high enough to lessen the chances of interception. If the receiver will correctly execute any of the better "breaks," he can get the two-yard lead which is necessary to put him in the clear for a pass to the free side. On the other hand, any pass which is incomplete should be so, because it was thrown too far in front of the receiver, not because it hit too low or because it was knocked down by the defense. Passes should be thrown so that they can be taken off a peg at arm stretch in front of the receiver going away at full speed. The ends should train the passers. They should

(Continued on page 48)

TRAINERS JOURNAL

SECTION

THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

OCTOBER, 1941 No. 2

Official Publication
Of the National Athletic
Trainers Association

Three Methods of Taping for Injuries and the Prevention of Injuries

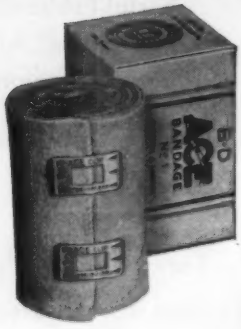
Injuries of the Knee Joint

Training Room Equipment

George Hoover, M. D.—
Line Coach
Lloyd Stoke—Trainer
Bernie Bierman—Head Coach

WHEN INJURIES ARE KEPT DOWN

Is it Good Luck? or Good Training?



THE record shows that good training has it all over "trust to luck" methods. Trainers who use the three Aces — each in its proper place — do not lose so many men in practice, keep game injuries down to a minimum, and get injured men back into action faster.

ACE No. 1 — Strong, long-lasting, washable. Economical, can be used over and over

a. Flexible support for muscles, joints and tendons.
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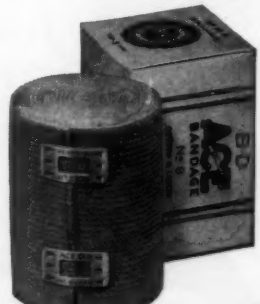
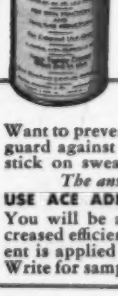


ACE No. 8 — Made with Lastex (rubber). Strong, full-bodied, washable

a. Heavy, extra tension for knees and thighs without hindering free movement.
b. Constant firm elastic support for chest or body injuries.
c. Extra pressure bandage for shoulders and knees.



ACE ADHERENT

Want to prevent tape from slipping? Want to guard against tape-poisoning? Want tape to stick on sweaty surfaces?

The answer to these questions is:

USE ACE ADHERENT UNDER ALL TAPING

You will be agreeably surprised at the increased efficiency of taping when Ace Adherent is applied first.
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a. Strong adhesive support without bulk.
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f. "Perfect-fit" occlusive dressing for cuts, blisters and abrasions.

A copy of the Ace Athletic Manual on the prevention and treatment of athletic injuries is yours for the asking.

BECTON, DICKINSON & CO., Rutherford, New Jersey

THE
TRAINERS JOURNAL
SECTION

Official Publication National Athletic Trainers Association

October, 1941 No. 2

Officers National Athletic Trainers Association
For 1941-1942

President, Lloyd Stein, University of Minnesota
1st Vice-President, John Kelly, New York University
2nd Vice-President, Henry Schmidt, Santa Clara University
3rd Vice-President, Wilbur Bohm, Washington State College
Executive Secretary and Editor of Trainers Journal, Bill Frey
Office of Publication, Iowa City, Iowa

Tooting Our Own Horn

OF course we are tooting our horn about our Trainers Association, our Trainers Journal and our High School Trainers Program. Our toot would sound weak, however, if it were not a pretty popular number right now, and amplified by dozens of outstanding coaches, athletic directors and trainers throughout the country. We quote at random some of their expressions of approval.

"Certainly a step in the right direction." *Clark Shaughnessy, Stanford University.*

"The idea behind the student trainer plan is a very progressive and fine move as related to interscholastic athletics." *Bernie Bierman, University of Minnesota.*

"Wonderful progress is being made." *Lee Jensen, Physical Therapy Technician.*

"Can do a great service for youth and athletics." *Norman C. Perkins, Colby College.*

"Your student trainer program is going to fill a great need." *Richard Fassoux, Christ School, Arden, N. C.*

"This type of work is most needed in our high school athletics today." *Peck Geneva, Athletic Director, St. Petersburg, Fla.*

"The student trainer program is the answer to one of the greatest problems of the high school coach." *Bob Lamson, Webster City, Iowa.*

"Student training program is one of the best moves that has been introduced in the athletic program for some time." *J. T. Saur, member of the Board of Control, Iowa High School Athletic Association.*

"I am 100 per cent behind the Trainers Association and their work." *Emil Klumpar, Coach, Storm Lake, Iowa.*

"Sending in my dues at once for association and Trainers Journal. You can't beat it." *Herman Kaiser, Wausau, Wisconsin.*

"Trainers' prayers answered by addition of new Journal." *Archie Hahn, University of Virginia.*

"A very useful organization." *P. H. Beebe, Physical Supervisor, North Tonawanda, N. Y.*

UNDER THE SHOWERS

ARCHIE HAHN of the University of Virginia will have plenty of stories to tell his grandchildren about great athletes from seven universities, ranging from Oregon in the West to Brown in the East, then south to Virginia. He has served as a coach and trainer since 1908; coach and trainer for all sports at Pacific University for four years; at Monmouth College for one year; at Whitman College, Walla Walla, Washington for four years; and at Brown University for four years. He was backfield coach, track coach, boxing coach and trainer at the University of Michigan for three years. The remainder of the time he has been track coach and trainer at the University of Virginia. He trained the Cavaliers to a conference basketball championship last year.

OLLIE DEVICTOR, head trainer at the University of Missouri, started training athletic teams twenty-eight years ago. His record is eight years at Penn State, nine years at Pittsburgh, six years at Washington University and the remainder at his present post. Ollie recently wrote me a letter stating that he was happy that someone had the fortitude to start this great training program that will benefit the training profession throughout the years.

BILL DAYTON, head trainer at the University of Miami, recently wrote me that he has developed a great treatment for charley horses. I won't let Bill alone until he gives all of us the inside dope. It must be great to have a job in the land "Where Summer Spends the Winter" and be on hand for all of the great football games in the Orange Bowl. In this same city a real tournament for fishermen is staged exclusively for the athletic family every New Year's day by that great fishing authority, Earl Roman. You trainers who fish (and I mean Bill Raney of Alabama) better spend a few days in Miami and some hours with our friend Bill Dayton. He is a very fine fellow and has some good sound theories on the training profession.

FRED R. DRISCOLL, assistant trainer at Yale University, will long be remembered by the training profession as the editor of "My Methods of Taping Athletes," published by the Seamless Rubber Company, Inc. It is a very fine

(Continued on page 35)

Three Methods of Taping for Injuries and the Prevention of Injuries

1

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High School Trainers Lesson No. 2

IN all pictures the outside of the foot is on the left while the inside is shown on the right, giving you at a glance the exact location of the tape on both the outside and inside of the foot. By looking at the pictures and following the numbers you will find the taping simplified.

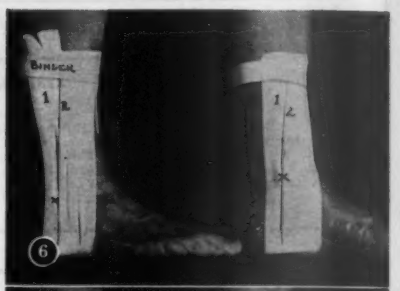
Always have the player sit on a table with the foot extended over the end of the table or elevated in taping position on top of a small box. Never tape any part of the body when it is in an unnatural position. Always apply tincture of benzoin to the surface to be taped and allow this to dry before starting the tape application. This gives you a better surface on which to tape, helps in the removal of the tape and lessens the tendency to any breaking out on the skin, sometimes referred to as tape rash. The various manufacturers of tape have improved their products so that the prevalence of tape rash is reduced to a minimum. Always shave or clip the hair off surfaces on which tape is to be applied.

Taping is necessary in the care of injuries and a positive way of reducing the number of injuries. There are many expenditures in an athletic department that may be cut before the tape budget is touched.

Taping for Arches and Simple Ankle Weaknesses—Illustrations 1-4

Illustration 1—Have the foot in a normal position, the length of the tape to be used varying with the size of the foot. Attach strip 1 on the bottom of the foot (see Illustration 4) pulling the tape on the inside and up on the arch, on the edge of the ankle bone, around and across the back of the ankle—upward, around and over the shin bone.

Illustration 2—Attach strip 2, same length of tape as in preceding illustration, on the bottom of the foot as in Illustration 4, pulling the tape on the outside and up, at the edge of or slightly over the ankle bone, around and across strip 1, upward, around and over strip 1 again.



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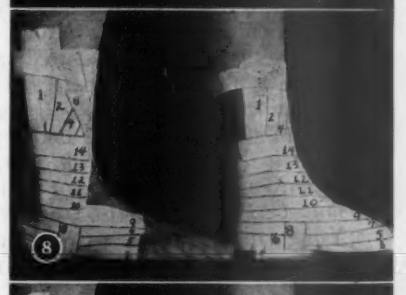

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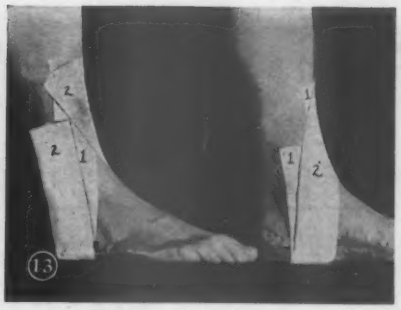

Illustration 3—Strip 3 is two-inch tape, long enough to reach around the leg. Attach this strip 3 over strips 1 and 2. Strip 3 is a binder. Strip 4 is two-inch tape, long enough to reach around the foot. Have the athlete stand on top of strip 4 with full weight, then pull the end on the inside of the foot, up and over. Next pull the end on the outside of the foot, up and over this latter strip.

Illustration 4 shows the start of strips 1 and 2 in Illustrations 1, 2, and 3.

The Gibney Bandage or Basketweave Illustrations 5-11

Illustration 5—Strip 1 is usually about seventeen inches long. Do not be afraid to extend this strip up the leg. Grasp the ends of the tape with the right and left hands, gauging the middle of the strip. Attach the tape on the bottom of the heel, pulling upward evenly with both hands and attaching both ends at the same time.

Illustration 6—Strip 2 same length as 1. Notice how strip 2 crosses over the shin bone. More than two strips may be used if desired. The binder should be applied next, covering strips 1 and 2. This binder will hold the first two strips in position.

Illustration 7—Strip 3 should be long enough to reach from the base of the small toe back and around the heel to the base of the big toe, crossing over strips 1 and 2. Next apply strip 4, which should be long enough to reach under the foot and up on both sides of the leg. This strip 4 should be handled the same as strips 1 and 2, with both hands and an even pull. Notice how strip 4 crosses over and up on the shin. This gives added leverage to the bandage.

Illustration 8—Continue applying 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, in the same manner that you applied strips 3 and 4, keeping the tape smooth at all times. If you wish to make a closed Gibney, which gives greater strength to the bandage, continue strips 10, 11, 12, 13, 14, completely around the ankle. It is also advisable to continue with the short strips such as strip 14, completely covering strips 1, 2, 4.

Illustration 9 shows strip 15 running under the arch and over the instep. This strip is a binder.

Illustration 10 shows a back view of the ankle with strips 3, 5, 7, 9, 10, 11, 12, 13, 14 and the binder.

Illustration 11 is a front view of the finished open Gibney. If strips 10, 11, 12, 13 are continued across the ankle, a closed Gibney is the result.

Many trainers like to add another length of tape in front of and slightly over strip 15. This added strip should be applied with the athlete standing on the taped foot. The attachment of the tape would be the same as strip 15, with the inside end of the tape pulled up and over the outside end of the strip.

Common Type Ankle Bandage Illustrations 12-14

Illustration 12—Tear or cut a strip of two-inch tape, 1, fourteen inches long. Attach the tape on the inside of the foot, three inches above the ankle bone, having the foot in a normal position. Pull the tape under the heel parallel with the leg, upward and on the outside, over the ankle bone and slightly over the shin bone.

Illustration 13—Take a second strip, 2, the same length. Start the attachment on the outside of the foot, pull under the foot, over strip 1, and upward over the ankle bone and slightly across the shin bone, partially covering strip 1.

Illustration 14—Strip 3 is two-inch tape, long enough to reach around the leg. Covering strips 1 and 2, this strip, 3, acts as a binder.

Gauze-Over-Tape Bandage Illustration 15

Illustration 15—Use common gauze for the gauze-over-tape bandage, figure 8 style. Start at the top of the tape on the inside, pulling the gauze tightly as you go under the foot and up and over on the outside, carrying it back around the ankle in figure 8 fashion. Use about three-quarters of a two-inch roll of gauze. Make the gauze fast with a five-inch piece of one-inch tape. This style of bandage which adds strength and holds the tape may be used over all types of taping.

Under the Showers

(Continued from page 33)

book, complete in every detail and easy for the new men in the field to follow. Every school should have one of these booklets and may receive it by writing the Seamless Rubber Company, New Haven, Connecticut. Fred has been at Yale for the past twelve years.

We received a letter from the far-away Philippines requesting information and an application blank for membership in the N.A.T.A. Benjamin Antonio, Illocos Sur High School, Virgin Illocos Sur, Philippines, was the sender of the letter. Looks as if the National Trainers are receiving world-wide attention.

Elmer Hill, better known to his boys as "Ike," left the sheltering wing of our old friend, Matt Bullock, after serving under the great Illinois trainer for eleven years, to be on his own at Washington University at St. Louis. He has been head trainer at Washington for the past six years. Ike is also an expert equipment man and has promised us for an early issue an article on How to Build Protective Equipment. He was one of the few trainers who had a share of the first meeting held in Des Moines April 30, 1938, and is, therefore, a charter member.

Word has been relayed to me that Mike Chambers, formerly of Louisiana State and later of U. C. L. A., has joined the navy.

Injuries of the Knee Joint

By Frank D. Dickson, M.D.
Kansas City, Mo.

THIS article which appeared in the Journal of the American Medical Association is reprinted by permission both of that publication and of the author, Frank D. Dickson, M.D.

DERANGEMENTS of the knee joint, the result of trauma (injury), are comparatively common. This situation has been appreciated for a number of years in the British Isles but has not found wide recognition in this country; indeed, there is still a widespread lack of information here on such injuries. The almost universal indulgence through the British Empire in rugger football, which throws a heavy strain on the knee, with frequent injuries to this joint, is responsible for the development of the understanding which the members of the medical profession of Great Britain have of derangements of the knee. Today, with the opening up of the American game of football, the speeding up of baseball, automobile accidents and the great increase in industrial injuries, all leaving in their wake injuries to the knee joint, interest in the pathology of that joint is being quickened in this country.

Before the discussion of derangements of the knee joint is taken up, the anatomy of this important and complicated articulation might advantageously be reviewed. The knee joint consists essentially of the broadened ends of the tibia and the femur with a sesamoid bone, the patella, in the extensor apparatus; two fibrocartilages, interposed between the ends of the tibia and the femur; two cruciate ligaments, anterior and posterior, and two lateral ligaments, the internal and the external. In addition to these structures, comprising the knee proper, nature has provided it with strong muscles which play an important rôle in its control and protection. Such a complicated anatomic arrangement is necessary, for the knee must be strong, since it must sustain the body weight transmitted to it through long levers and at the same time must permit the wide range of movement necessary for locomotion and activity.

The great strength of the knee joint, however, is dependent on the integrity of the two cruciate and the two lateral ligaments and the muscles which surround it. So important are the ligaments that a brief description of them is worth while (Illustration 1).

The cruciate ligaments, anterior and posterior, help in preventing lateral movement of the knee, particularly when it is flexed. Their chief function, however, is to prevent the tibia from slipping backward and forward on the femur and to limit rotation of the tibia on the femur.

The internal lateral ligament, a long fan-shaped structure, is of great importance, since it sustains most of the burden of preventing lateral movement of the knee. It has further importance in that the internal semilunar cartilage is firmly attached to it, at least in its posterior part, so that stresses and strains to which it is subjected are transmitted to that cartilage.

The external lateral ligament is a long cord-like bundle, which, with the biceps tendon, strengthens the outer side of the joint. It is entirely separate from the capsule of the joint, and the external semilunar cartilage is not attached to it.

Any of the structures entering into the formation of the knee joint may, under proper condition of stress, be injured and the function of the joint interfered with. It is obviously impossible to attempt to discuss all the various injuries to the knee joint which may occur, and this paper will deal only with the three most common derangements which occur as the result of injury. They are (1) injury to the semilunar cartilages, (2) injury to the internal lateral ligaments and (3) injury to the cruciate ligaments.

Illustration 1.—Anterior and posterior cruciate ligaments, internal lateral ligament attached to the internal semilunar cartilage and external lateral ligament.

Injuries to the Semilunar Cartilages

The internal and the external semilunar cartilage are crescentic fibrocartilages interposed between the tibia and the femur (Illustration 2). They are thick at their outer border and thin at the inner margin. Each cartilage assists the opposite lateral ligament in resisting lateral movement of the knee, for it acts as a wedge between the tibia and the femur and helps to keep the cruciate ligaments tense. The outer thick margin of the internal semilunar cartilage is firmly attached to the capsule and to the internal lateral ligament. The inner margin is free. The anterior cornu of the internal cartilage is always attenuated, and its attachment to the tibia is never very strong. The external cartilage is less firmly attached to the capsule and has no attachment to the external lateral ligament. In addition, both cartilages are attached to the tibia by coronary ligaments (Illustration 3), the fibers of which are weak and lax and permit some movement of the cartilages on the tibia. The fibers of the coronary ligament of the external semilunar cartilages are longer than those of the internal cartilage and permit wider range of motion between the external cartilage and the tibia than is possible with the internal. It is evident then that the external semilunar cartilage is much less firmly attached than the internal and has therefore a much wider range of movement. This fact has importance with reference to injuries of the cartilages, as will be seen later. Both cartilages move with the femur on the tibia in rotary or twisting movements of the knee.

Incidence.—In 214 of a series of 241 cases of derangement of the knee joint in the clinic with which I am associated, the diagnosis was injury to the semilunar cartilages. In 169 the injury involved the internal semilunar cartilage and in forty-five the external. Injuries to the internal semilunar cartilage then are three and seven-tenths times as frequent as those of the external cartilage. This ratio is lower than that reported by most observers, except Naughton Dunn[1] of Birmingham, England, who found that in 255 cases the ratio of injury to the internal semilunar cartilage to that of the external cartilage

[1] Dunn, Naughton: Lancet 1:1267 (June 16), 1934.

was 2.6 to 1. The reason for the marked predominance of injuries of the internal semilunar cartilage over those of the external is anatomic. First, the greater mobility of the external cartilage allows it to move about and to avoid injury. Second, the range of inward rotation of the femur on the tibia, which is a direct strain on the internal semilunar cartilage, is greater than that of external rotation, which is a strain on the external semilunar cartilage.

Etiology.—While there are predisposing causes of derangements of the semilunar cartilages, such as joint disease, lax ligaments and static defects due to flatfoot and knock knee, the immediate etiologic factor is trauma. By far the greatest number of injuries to cartilage are due to indirect trauma, the most common type of which is inward twisting or wrenching of the knee when it is in a slightly flexed position and the foot is fixed (Illustration 4) or outward rotation of the knee under the same conditions. With inward rotation of the knee, the internal lateral ligament is stretched and allows separation of the joint surfaces and slipping inward of the internal semilunar cartilage. As the separated bones snap back, the cartilage is nipped and damaged. If the rotating force continues, the cartilage moving with the femur on the tibia is torn loose or ground between the upper and the nether millstones and fractured.

It is commonly believed that the damage generally suffered is a tearing loose of the cartilage from its attachment to the capsule, with displacement. While this is true of injuries to the external semilunar cartilage, it has been the experience at our clinic, which coincides with that of Platt of Birmingham, England, and W. Rowley Bristow of London, England,[2] that so far as the internal cartilage is concerned a displacement is not frequent, but instead the cartilage, in the majority of instances, is fractured. Of sixty-eight internal semilunar cartilages operated on, fifty-four were fractured and only fourteen were hypermobile. The explanation of the difference in the type of injury suffered by the internal and the external cartilages probably lies in the manner of attachment of the cartilages. The external cartilage, being much more movable than the internal, can accommodate itself more readily to stress and strain and thus avoid serious injury. The fact that injuries to the internal cartilage are almost always fractures has a decided bearing on treatment.

Symptomatology.—In the case of an acute injury to the knee the history of a torsion or twisting strain on the knee joint is an important lead and should always suggest a careful investigation for injury to cartilage. The degree of trauma need not be severe; in fact, a comparatively slight twist under the proper conditions may result in damage. The knee immediately becomes distended with synovial fluid and some blood, is extremely painful on manipulation, particularly a twist, and cannot be completely extended; if complete extension is forced, extreme pain is complained of. There is usually tenderness on the inner side of the knee, just to the inner side of the patella over the attachment of the internal cartilage, or over the anterior attachment of the external cartilage to the outer side of the patella. Of these symptoms, failure of complete extension of the knee is most important in the opinion of my co-workers and me.

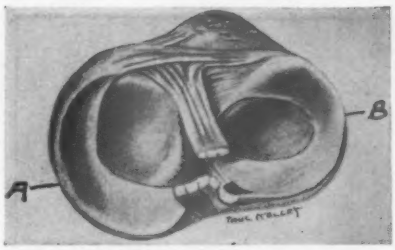

Illustration 2.—*A*, internal semilunar cartilage; *B*, external semilunar cartilage.

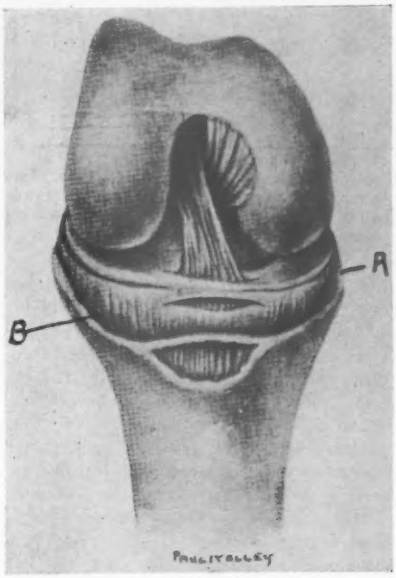

Illustration 3.—*A*, internal coronary ligament; *B*, external coronary ligament with its longer and more lax fibers.

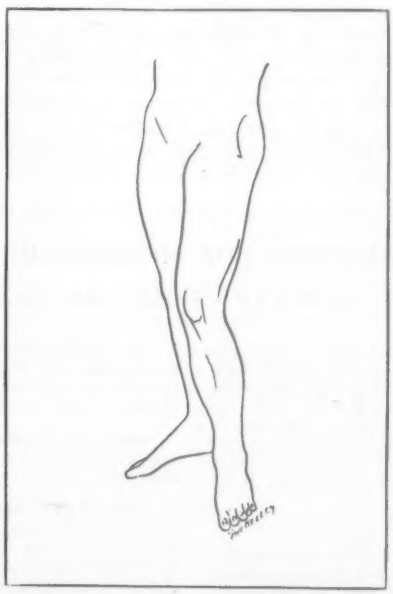

Illustration 4.—Inward twisting of the knee in a flexed position; this is the form of trauma which is responsible for most of the injuries to the internal semilunar cartilage.

When a derangement of the knee is seen days or weeks after the injury, the picture may be quite different. There may be no effusion in the knee, and local tenderness over the cartilage attachment may be slight or absent. So long, however, as the cartilage or a fractured part of it is displaced, limitation of complete extension will persist. On examination it will be found that the knee both at rest and in weight bearing is held in from 10 to 15 degrees of flexion, and attempts to secure complete extension are resisted and cause pain over the cartilages, external or internal, and in the popliteal space. If the thigh is acutely flexed on the trunk, the knee is flexed to a right angle on the thigh and torsion movements of the knee are made, pain over the internal semilunar cartilage can be elicited with internal rotation if the internal cartilage is displaced or fractured and pain over the external semilunar cartilage on external rotation if that cartilage is involved. One sign of injury to cartilage which is frequently spoken of is "locking." By "locking" is meant a sudden fixing of the knee in a partly flexed position so that it cannot be extended until it is manipulated. "Locking" in this sense is, according to our experience, a comparatively rare occurrence. "Locking" in the sense that complete extension of the knee is impossible occurs in practically every case of injury to the internal cartilage but is somewhat less constant with injuries to the external cartilage. The condition, however, should be spoken of as "blocking" rather than "locking." In cases of subacute and chronic derangement, the patient, in addition to the objective symptoms, complains of pain in the knee on use, giving way and more or less insecurity—all due to the fact that the knee is being used in a more or less flexed position, with resulting strain, irritation and instability. The X-ray evidence of injury to cartilage will be negative.

Diagnosis.—In most cases the diagnosis of injury to cartilage is not difficult, though frequently it is impossible to make a definite statement as to the extent and location of the damage. The history of

[2] Bristow, W. Rowley: J. Bone & Joint Surg. 17:605 (July) 1935.

an injury with acute onset of symptoms, the characteristic point of tenderness, loss of complete extension, and pain and insecurity in the knee are the most reliable diagnostic signs. The derangements of the knee which must be ruled out in diagnosing injuries to cartilage are the presence of loose bodies, tears of the cruciate ligaments and ruptures or strains of the internal lateral ligament. The presence of loose bodies may be eliminated by X-ray examination and the transitory character of the symptoms. Tears of the cruciate ligament are usually the result of severe injury and are accompanied by marked instability of the knee, particularly in the anterior posterior direction. Injuries to the internal lateral ligament give pain on the inner side of the knee, but there is no blocking of the extension, and the tenderness complained of is usually at the insertion of the ligament into the internal condoyle of the femur and not over the cartilage.

Treatment.—Before I discuss the specific treatment of injuries to cartilage, I should make one statement as being applicable to all derangements of the knee joint. After any injury to the knee which produces effusion and definite symptoms of derangement, the knee should immediately be immobilized in extension by a plaster cast and should remain immobilized until the acute symptoms subside. Such a cast may be removed in a week or ten days, that is, when acute symptoms have disappeared, for more complete examination and the determination of the specific treatment indicated. With such a course, the knee joint is placed in the most favorable position for healing, whatever the form of injury may be, and the complete immobilization thus secured will insure the most rapid subsidence of acute symptoms and so enable an accurate estimate of the disturbance present to be made at the earliest possible moment.

The nature of the treatment of injuries to cartilage depends on whether the attack is the initial attack or a recurrence of a former one. Treatment should be conservative for an initial injury and in the acute stage of any attack and radical if disability persists after conservative treatment has been given a fair trial or if the patient has given a history of repeated derangements.

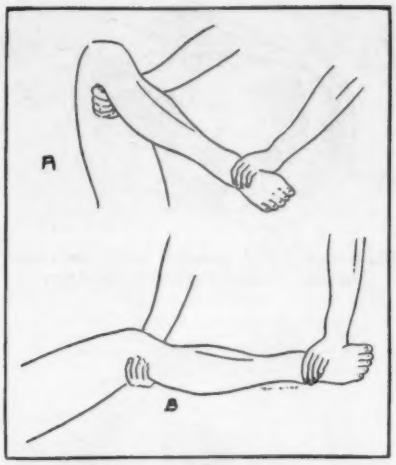

Illustration 5.—Manipulation to reduce displaced internal semilunar cartilage: *A*, acute flexion and external rotation; *B*, extension and external rotation.

Conservative Treatment.—The keynote of conservative treatment of injuries to cartilage is reduction of the displacement of the cartilage or of the displaced fragment if the cartilage is fractured. To accomplish these measures when the internal semilunar cartilage is involved, the thigh should be flexed on the trunk acutely and the knee acutely on the thigh. The leg should then be abducted and rotated outward to increase the space between the internal condyle and the upper surface of the tibia. The leg should then be brought sharply into extension with as complete relaxation of the knee as can be obtained (Illustration 5). At times an anesthetic may be used with advantage to secure the desired relaxation. Occasionally several attempts may be necessary to secure reduction, proof of which is that the knee may be completely extended without discomfort or pain. With injury to the external cartilage, the same maneuver with internal rotation instead of external rotation should be carried out.

After reduction has been secured a cast should be applied, extending from the upper part of the thigh to just above the ankle, and crutches should be used for locomotion. The cast should remain on a minimum of three weeks. At the end of this time it may be bivalved and massage and guarded exercise used to restore muscle tone and to build up muscle control of the joint. At the end of four weeks the knee may be used with a bandage support, which support should be worn for about another week. A fairly satisfactory number of displacements are completely cured with this form of treatment. Among seventy-three patients treated conservatively for an injured cartilage, fifty-nine recovered, nine did not recover, and in five cases the outcome is unknown.

If, however, after well-planned conservative measures have been carried out, complete extension of the knee cannot be secured and disability persists, operative treatment is indicated and is usually necessary for recovery. Also, if after recovery with conservative treatment other attacks occur, further attempts at conservative treatment will probably be unsuccessful and removal of the cartilage is indicated. With recurrent derangements the injury is almost certainly a fracture of the cartilage, and interference with the function of the knee joint cannot be overcome by any form of conservative management. Since experience has shown that most injuries to the internal semilunar cartilage are fractures, it follows that many will require removal.

Injuries to the Internal Lateral Ligament will be discussed in the November issue.

QUALIFICATIONS FOR MEMBERSHIP IN THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

SENIOR MEMBERSHIP: 1. Men who have been actively engaged in athletic training or closely allied work for a period of two or more years. 2. Men who are qualified to take charge of the work, in co-operation with the medical department and to direct it in athletic training in a college or university. 3. Men who have had four years of practical experience in a recognized athletic training department of a college or university or some other institution of recognized standard.

Senior members have voting privileges.

JUNIOR MEMBERSHIP: 1. Men who do not qualify as Senior members but who are actively engaged in athletic training either as an assistant in a college or university. 2. Men in charge of the training program in a high school, or in closely allied work. 3. Men who are taking an approved training course.

Any Junior member may become a Senior member upon completing the requirements for Senior membership and passing an admission test given by the Membership Committee. Junior members do not have voting privileges.

Senior and Junior applicants must submit along with the application blank a letter of endorsement from the physician who acts as medical supervisor in their institutions.

ASSOCIATE MEMBERSHIP: 1. Men who have not been actively engaged in athletic training for a period of eighteen months previous to their application. 2. Junior or Senior members who have not been actively engaged for a period of eighteen months, but who are interested in the advancement and recognition of athletic training. 3. High school coaches and student high school trainers.

Associate members do not have voting privileges.

The High School Trainers Plan in Operation

THE high school trainers' plan, as outlined in the September issue of the Trainers Journal, is being adopted by many high schools and by the smaller colleges which do not have a regularly appointed athletic trainer on the staff.

The purpose of the plan is two-fold. Coaches with four assistant trainers will be relieved of many arduous taping duties. More athletes will be taped than was possible when the coach had it all to do himself. From the high school student trainers' point of view, they will be gaining valuable and practical information in addition to rendering their schools a service.

It is suggested that high school boys who have read about the plan in the September issue apply to the coach or principal of their school for further information.

Briefly summed up, the duties of the student trainers, under the direct supervision of the coach and school medical supervisor, will be as follows: 1. Study the lessons as outlined in each issue of the Trainers Journal which will include diet for athletes, protective gear for ankles, knees, shoulders, hips, wrists, etc., treatment of injuries. 2. Assist the coach in the weighing in and out of all athletes, or, if the coach so desires, take complete charge of the weight charts. 3. Assist with the proper exercises for each sport. The hardening-up exercises require much of the coach's time. He will welcome assistants who can help with this work. 4. Assist in the building of protective equipment. In schools where funds are limited, student trainers may be of great assistance in the matter of constructing protective equipment. 5. Assume the responsibilities of an absolutely clean training room.

These are some of the duties undertaken by America's No. 1 student training team whose picture appears on this page.

THE picture shown above is that of the first high school trainers' team in the country to start work on the High School Trainers Plan. Dr. H. E. Farnsworth, medical supervisor, Storm Lake, Iowa, is shown instructing the four high school student trainers; Donald Bock, freshman, Richard Edwards, junior, LeRoy Eickhoff, sophomore and Kenneth Hill, senior (reading from left to right). Head coach and athletic director Emil Klumpar looks on with approval. A. E. Ruby, Superintendent, is an interested partner in this educational program sponsored by the National Athletic Trainers Association.

Training Room Equipment

1. What to Look for in Buying Elastic Bandages

ONE way in which your editor believes that he can be of service to you trainers is to keep you informed on training room equipment. Last month William Dayton listed for us what we believe is necessary in a training room. We plan to devote a page each month in our Trainers Journal to equipment.

WITH the wider recognition given to the use of elastic bandages of the roller type, in the prevention and treatment of athletic injuries, it is well to have a more complete understanding of the qualities of such bandages if we are to intelligently buy them.

It is a natural evolution that as soon as anything new is found to be valuable the market is flooded with articles branded "just as good" with price alone as the bait for the buyer. Price buying has ever been an insidious disease, highly contagious, and the only loser usually is the price buyer himself, unless you should include the players who had faith in the buyer and were sold short with inadequate equipment.

Elastic bandages of the roller type are of estimable value to the coach who finds that he must do all the training room work for his team, and even the college trainers find them of great value for the rapid recovery of an injury or in the prevention of the recurrence of an old injury.

For discussion's sake let us divide elastic bandages into three divisions: first, the all-cotton elastic bandage for general utility work; second, the greater-tension bandage made with lastex yarn for specific work; third, the newcomer into this field, the elastic adhesive bandage.

1. *General Utility Bandage.* This bandage is used in the prevention and treatment of sprains, strains, joint injuries, muscle injuries, pulled tendons and any other ailment requiring firm elastic support, coupled with passive massage, without danger of cutting off circulation. The qualities you should look for in this bandage are:
   a—A good body. The bandage should be firmly woven and not thin in texture. To get good support, the body or cross threads should be of uniform size cotton thread without starch filler, soft enough for comfort and firm enough for good support.
   b—Good elasticity. This can only be produced when the long threads are made of the best grade long staple cotton. A certain amount of elasticity can be temporarily woven into a bandage by using the cheapest short staple cotton yarn. But this elasticity will not withstand many washings, which of course lessens its usefulness. A good all-cotton elastic bandage should stand repeated washings and launderings and still be efficient for a complete school year.
   c—Washability. This factor alone is of great importance to the buyer of elastic bandages. It must be remembered that to restore the elasticity in all-cotton elastic bandages it is necessary to wash them or subject them to immersion in hot water after every use. This is the factor that determines whether or not there is good quality in the bandage. If the bandage is of the highest quality (the best buy for the user), it should stand repeated washings and launderings and give satisfactory service throughout a full school year.
   d—The advantage of a soft feather edge. Notwithstanding claims to the contrary, a soft feather edge on an all-cotton elastic bandage is of great value as it permits an even tension throughout the width of the bandage without the possibility of the edges cutting into the flesh and hindering circulation. This feather edge, if properly made, also will prevent the bandage from raveling along the edge.
   e—A standard test for the elasticity of a good all-cotton elastic bandage is: a thirty-six-inch length of the material stretched to seventy-two inches and kept stretched for one hour should, upon release from its stretching, return to fifty-four inches in length within fifteen minutes. This is a standard test for good all-cotton elastic bandages and any bandage that you buy should be guaranteed to withstand this test.
2. *Elastic Bandage Made With Lastex Yarn.* The elastic bandage made with lastex yarn has become a very important factor in the treatment of certain injuries. Because of its permanent elasticity, due to the lastex yarn, it can be used on thighs for Charley-horse, pulled tendons, groin injuries, rib injuries and knee injuries. The qualities of a good grade bandage of this type are:
   a—It must have a compact body or cross weave in order to give strength to the bandage. There is a definite relationship between the body or cross weave of this type of bandage and the long threads or lastex yarn which relationship must be of such character that, when the bandage is stretched to its fullest, it is still compact enough to give good support.
   b—A good bandage of this sort should be made of lastex yarn as any other rubber substance will not withstand boiling, atmospheric exposure or the deteriorating effects of perspiration. There are a lot of imitations of lastex yarn on the market but none of them will approach the permanence of the lastex yarn. The stretch of lastex yarn can be controlled so that there can be no possibility of cutting off circulation, and this factor should be inquired about when the coach or trainer purchases bandages of this type.
   c—The bandage should stand washing without bunching; in other words, the material after it has been washed and dried should present a firm smooth texture.
3. *Elastic Adhesive Bandage.* The advantages of elastic adhesive bandages in certain phases of prevention and treatment of athletic injuries have just been recognized. Because of its elastic qualities, this type of adhesive bandage can be molded to fit any joint, muscle or bony protuberance of the body and will greatly increase the efficiency of the strapping. In the bandaging of knees, shoulders, rib injuries, Charley-horse, and pulled tendons it is found to be of great value because of its elasticity and the very firm support that the adhesive mass can give to the finished strapping. The qualities one should look for in this type of bandage are:
   a—An easy stretch. It is necessary, in order to get an evenly applied bandage with elastic adhesive material, that the material stretch easily and come off the roll easily. If these qualities are not present the trainer will find himself applying the bandage much too tightly.
   b—Strong body texture. Unless the bandage has strong body texture coupled with its easy stretch, you will not be able to get good strong support, which of course is the reason for using such a type of bandage. The backing of the bandage

should be closely woven and have all the qualities of the all-cotton elastic bandage as discussed above.

c—Good adhesive qualities. The bandage should have sufficiently tacky adhesive qualities to insure prompt adherence to the skin immediately after application, but not too great a stickiness to interfere with the easy removal of the bandage after use.

d—Quality of materials used in the adhesive mass. This is of utmost concern to the buyer of elastic adhesive bandage for, unless the manufacturer can assure you that the quality of the materials is of the highest, you are very apt to run into a great amount of skin irritation. In most cases this can be attributed to cheap resin, cheap rubber and other low grade ingredients, which, while it is true that they will give you an adhesive mass, will cause a great amount of skin irritation. These factors should be discussed with the manufacturer of elastic adhesive bandage in order to get the assurance that the materials used are of the highest quality.

From the above discussion, it can be clearly seen that only quality merchandise will give the service that should be expected of the items used in the field of athletic training. If good merchandise is purchased originally, the amount of service you get from it will be far cheaper than the constant re-buying of inferior merchandise.

2. Infra-Red Lamp Treatments for the Relief of Pain in Athletic Injuries

ALMOST every person knows that the sun contributes its benefits to the vegetable and animal kingdoms, and that, without the rays of light, something else would have to be created to take their place.

It is generally known that the most penetrating ray of the spectrum or visible light ray is the infra-red. This ray produces heat by the small vibrations that penetrate almost every substance which it contacts and the heat is produced where a light ray is deflected.

The sun has six other colors that are visible to the eye, each one having a different vibration, but it has not been proved what value they have to mankind. These rays have no great penetration and for this reason they are termed surface heaters in light therapy.

Heat is a form of energy that we have always recognized as a benefit in the relief of pain. We, therefore, have many appliances that have been manufactured to produce heat such as the hot water bottle, hot water baths, electric pad, electric heater, the heat lamp and diathermy.

Treatments with the infra-red lamp have given great satisfaction in athletic injuries and will no doubt be used more extensively in the future when full comprehension of this harmless appliance and of the benefits from its application is attained. The molecular vibration that is brought about by the diathermic effect of the infra-red gives a dilation to the tissues and an increased blood supply that washes away the toxin and brings the tissues back to normality quickly. Therefore, we recommend infra-red treatments because they are simple in application, harmless to use and effective and beneficial in results.

Manufacturers of infra-red lamps are constantly improving their product. Today, we have on the market a new appliance, a new infra-red lamp, which filters back the rays that are not so penetrating and allows none of the rays below 5,000 Angstroms to come through the filters. It is 95 per cent pure infra-red between 5,000 and 27,500 Angstroms and allows

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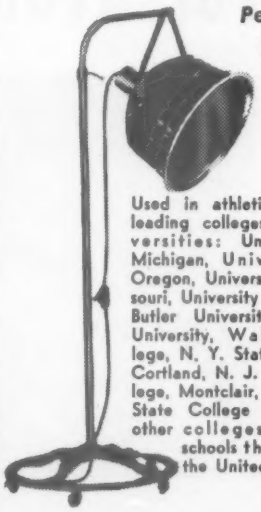

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but 5 per cent of the full production of the element of those Angstroms above 27,500 to 120,000 to come through the filters producing a mild surface heating. This gives a very satisfactory appliance for a person to use and makes it possible for him to use it a sufficient length of time to acquire heat deep into the fascia similar to a mild diathermia.

This new appliance when used thirty inches from the field of application will penetrate approximately two inches in twenty minutes and there is no danger of over-heating, burning, or blistering regardless of length of treatment. It has been found very beneficial to hold the heat in the area of ankle and knee joints following a fifteen-minute treatment with a diathermia machine, but it must not be used too close. Many people have the tendency to use this appliance too close for the reason that it produces such a strong pure infra-red ray that penetrates through the sensatory nerves, which are on the surface, without giving the sensation of a burning or heated effect.

Many trainers find uses for infra-red radiation in addition to the treatment of injuries. Infra-red radiation may be used for abscesses, burns, colds, headaches, laryngitis and infections. These treatments should be given only upon advice of the medical supervisor of the institution.—EDITOR'S NOTE.

Tape Topics

THE column Tape Topics, as announced for the October issue of the Trainers Journal, is short because of limited space. Questions for this column should be sent to the Athletic Trainers Office, Iowa City, Iowa.

QUESTION: I have been instructed by those close to the athletic department in our high school never to use heat in the treatment of athletic injuries. What is your opinion of this method?

Answer: The consensus of trainers who are members of the N. A. T. A. feel that they would be greatly handicapped if they could not use heat of some type in the treatment of certain injuries. It is true that heat should never be applied for at least forty-eight hours after the injury so as to prevent the recurrence of a hemorrhage.

QUESTION: I have a boy with a very bad knee, the knee having been hurt while playing football. Is it possible to purchase a manufactured knee brace that will permit using the boy in athletic contests?

Answer: It is possible to purchase well-built manufactured knee pads. I would advise inquiring of your sporting goods dealer.

QUESTION: During early fall practice my boys seemed to perspire a lot. Is it true they are losing too much salt from their bodies in this manner?

Answer: It is very true that salt deficiency is something that you have to watch out for. It is advisable to administer salt tablets, but first consult your medical adviser or school physician.

QUESTION: During the regular athletic season my boys are bothered with athlete's foot. Could you advise me what preventative could be used to do away with this bothersome disease?

Answer: The first thing that must be done to cure athlete's foot is to disinfect your showers and dressing rooms scientifically, at the same time treating your boys with one of several very fine powders or chemicals now on the market. Every athlete should powder his feet immediately after taking his shower. This will keep the feet dry and will not promote the growth of the fungus, known as athlete's foot.

The membership cards for the National Athletic Trainers Association will be mailed the second week in October. I am late with them because the new memberships have been coming in so fast I could not take care of them and the other work that is necessary in the publishing of a Journal. BILL FREY.

For Treating Tackle Shoulders

A simple effective way to speed return to action

Coaches and trainers are constantly faced with the problem of keeping first-string men in prime playing condition. Very often such injuries as *tackle shoulders, sore* or *bruised muscles, abrasions, strains* or *sprains* can be successfully treated by the prompt application of a hot dressing of ANTIPHLOGISTINE—developed more than half a century ago and now widely used as a first aid in bringing athletes with common injuries back to fighting trim.

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The remainder of the books will be sold at $2.00.

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A Basketball Clinic for Spectators

By Louis A. Zara

Director of Athletics and Basketball Coach
Cato-Meridian Central School,
Cato, New York

MANY parts of the country sponsor baseball and football schools regularly, but basketball clinics are seldom featured. Judged by the number of participants and spectators, basketball is the world's most popular game. Most of this interest is due to the natural action which the game provides. There is much behind these thrills, however, with which the average spectator is not familiar. A basketball clinic properly staged for the spectator will present an insight into the techniques and methods which precede and produce the high lights of the game. The term, "clinic," should not be thought of solely as confined to rules interpretation, and officiating. As such, clinics are interesting to coach, player, and official but not at all attractive to the average spectator.

The spectator of basketball is limited in his knowledge and understanding of the game. Since attendance at games is important and desirable to all concerned, means should be developed to give the spectator a better understanding of the game through interesting and colorful clinics. Since basketball is but fifty years old, it is the duty of every coach to advance it in every way possible. Schools may promote, not only intense interest in the game by simplifying and explaining its intricate phases for the average spectator but also good sportsmanship, appreciation of good play, and an understanding of the duties of officials.

Here at Cato-Meridian we have conducted two spectator or fan basketball clinics. The term show might more appropriately be used, for that is just what our spectator clinics proved to be. Rural people as a general thing, do not see many different teams engage in basketball, and, as a result of the clinics held in our gymnasium, the attitude of the people of our community toward basketball has completely changed from one of apathy to one of intense interest.

During the past two years, the services of the dynamic and friendly Clair Bee and his famous Long Island University Blackbirds have been secured to conduct our spectator clinic. Coach Bee is noted for his sense of humor, showmanship and uncanny knowledge of the game. The clinics that he conducts prove educational, interesting and exciting.

My first attempt to sponsor a basket-

ball clinic was in 1938 at the Patchogue, Long Island, High School. A capacity crowd filled the gymnasium; four hundred of those present were coaches and players from all parts of Long Island.

In April of 1940, Coach Bee and the Long Island University basketball team came to Cato-Meridian, Cato, New York, to dedicate the opening of our new school gymnasium. Over twelve hundred people attended this event. Six hundred of these were coaches and players, traveling, in some instances, as far as one hundred and fifty miles. Many townspeople and rural fans who had never seen any phase of basketball before were on hand and have been enthusiastic fans ever since.

Again this year, March 29, 1941, Cato-Meridian Central School sponsored a basketball clinic. Coach Clair Bee and his players returned at the request of coaches, players and fans in this general section. Over one thousand attended this demonstration; five hundred of whom were players and coaches.

The staging of a spectator clinic, although entailing much work was interesting. At least, I found it so. It must be carefully planned and promoted. It is a wise policy to win the good-will of all coaches possible and to interest them, at the outset, by soliciting their suggestions. They are invariably enthusiastic and willing to help.

The advertising must be carefully planned. Letters should be sent interested coaches, enclosing stamped-addressed envelopes or postal cards for convenience in replying. Personal calls should be made on coaches, sportswriters and sports commentators. Letters should be sent to organized clubs, church leagues, town teams and all schools within a reasonable radius. We used many circulars, heralds, and posters and found them an effective means of advertising. Follow-up stories in local and other newspapers were also helpful. Coaches were invited as guests. Invariably the coach brought a squad of his boys.

The program covering the style of play employed by Long Island University and other outstanding teams, lasted two hours and thirty minutes. Coach Bee explained his theories and practical views of the game with the assistance of his players who clearly illustrated his style of set shooting, drills, dribbling, ball-handling, defensive and offensive maneuvers and general and individual team play. Many of the practice drills were filled with humorous situations, and the entire program was fast and full of pep. The fans liked this type of program. At the completion of the demonstration, 16 mm. movies were shown of several Madison Square Garden games.

Plans for the clinic had to be made several months in advance. The advertising had a continuity and regular releases concerning the number of reservations re-

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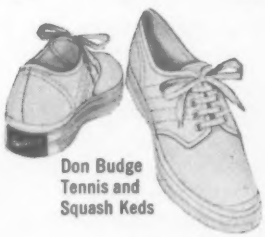

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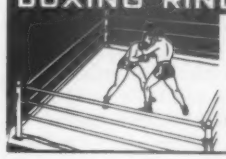

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ceived, coaches expected to be present, etc., were mailed out.

Cato-Meridian has a population of approximately seven hundred people, yet our clinic drew over one thousand; several hundred more were unable to attend because our gymnasiums could not accommodate them.

Our programs were planned as non-profit functions. There were, however, certain expenses to be met. To cover these, we charged thirty-five cents general admission, while players from various schools were admitted for fifteen cents. Coaches were admitted free. The demand for seats was so great that many local merchants and townspeople suggested, in fact, demanded, and set a price of fifty cents for reserved seats. Three hundred and fifty seats were reserved and sold out a week before the date of the clinic.

Clinics such as our spectator clinic may be sponsored by individual schools or as a co-operative affair by league member schools. Coaches should take the initiative in promoting the clinics, as it is necessary that they be kept out of the hands of "Professional Promoters." Coaches may co-ordinate the program, but the general work should be carried on by school clubs. At Cato the varsity club and the athletic association sponsored the clinics. Our Tri-County league has decided to have our league sponsor basketball clinics in the future. Optimistic league officials are now working on plans for bigger and better clinics. The schools represented in this league are Cato-Meridian, Hannibal, Port Byron, Fair Haven, and Red Creek.

A Spectator Clinic May Teach Good Sportsmanship

The success of a spectator clinic depends much on the kind of program presented. We should get away from the technical aspects of the game such as we find in the discussions at clinics arranged especially for coaches. Spectators enjoy a demonstration game and hearing about game incidents from an entertaining speaker. We were surprised to find so much enthusiasm among the spectators at the showing of the films.

A spectator clinic may do much to improve the sportsmanship in a community. If points from the demonstration game and the games shown in the films can be brought out in an interesting way to explain to the spectator some of the decisions that officials make, spectator sportsmanship will be greatly improved.

The Passing Attack

(Continued from page 30)

make them put them there in practice.

Some men catch passes while diving for five or ten feet. Some can catch them when the ball is seemingly out of possible reaching distance above the head or to the front. Some will take the ball away from a group of three of the opposition who had equal chances with them. As expressed by one of the better known coaches of the country, "Pass reception is 75 per cent determination, 25 per cent technique." The technique should be developed with determination. Pass! Pass! PASS!, until it becomes natural to all concerned. It should be an inflexible rule with the end and around the field that a pass touched must be a pass caught.

Through constant practice in catching passes and in scrimmage through pass plays, ground-work is laid for the passing attack on the day of the game. Further ground-work is laid through the running attack of the first plays of the game before the first pass is thrown. It is laid by every successful play that the offense runs. Every play gaining through or around the line will draw the defense tighter, closer to the line, and closer to the center of the playing field, and open the air for passes. For this reason it is doubly important to the offensive scheme of things that the end learn to block before he is permitted to catch passes.

In addition to setting up passes by a running attack, the end can further set up the passing attack by keeping the defensive backs completely at sea as to his intentions when leaving the line of scrimmage to block the secondary or to receive a pass, and when acting as a decoy for other pass receivers.

The end should never vary his stance in such a way as to telegraph intentions to the opponent. This is particularly true of the end on pass plays. If the defense is forewarned through a change in the stance of the end or back, the chance of completion of a pass is greatly lessened. Once warned, the defense no longer has to play for both pass and run, but can concentrate on stopping the passing attack, a much easier task. Further, the man unintelligent enough to warn the defense through break in stance will not be very dangerous as he will not outsmart the defensive backs and get loose for the pass.

If every pass looks like a running play, passes will be easier to complete. And if every decoy will work harder when pulling defense to the side to form a hole for another receiver than when catching a pass himself, the receiver will be in the clear and a successful passing attack will result. A successful passing attack will do much toward opening up the defense for the running attack to function to fuller efficiency.

Aside from aiding in prevention of in-

terceptions, completion of passes, and opening up the running attack, the end will find deceptive tactics an aid in blocking. For, if the defense thinks that he is coming across for a pass, it is much easier to lure him into blocking position. Likewise if the back is ready to dodge a block, he is not in ideal position to protect against a pass.

It is often wise for the end to make a fake at blocking, or actually partially block the tackle before going out for a pass. The backs will watch the strong-side end for the key to their play on the defense. If he blocks they will diagnose the play as a run. After first glance they will turn their attention to someone else. Such tactics as those mentioned in the opening of this paragraph will often throw the defense completely off guard. Never let the defense know what you will do on the offense. In summary of the passing attack and the end; learn to catch, or for the coach, teach catching the ball, teach and learn acting, learn and teach the breaks to avoid backs, and learn co-operation with the receiver.

You Cannot Stand in the Way of Progress

(Continued from page 28)

ing the first season when they were legalized proves them to be satisfactory in every respect."—Commander L. S. Perry, United States Naval Academy.

These are representative of the comments which have been made by those who have given the new backboards a fair trial.

Looking Backward

Every change in any of the major sports has resulted in much discussion and in many cases much early criticism. Open-minded discussion represents a healthy condition. In five years or ten years from now, basketball men will be wondering why there was any doubt about the desirability of eliminating waste space on the backboard. The fan-shaped backboard has already been accepted so widely that there seems no good reason why any individual or group of individuals should question the motives or judgment of those who have been progressive enough to assist with the experimentation and to make it possible for this item of equipment to be legally used. Its ultimate use is inevitable and it is desirable that the transition be made as soon as possible. Practically all new gymnasiums are being equipped with the new type backboard and progressive coaches and directors will improve playing conditions by making the transition to the fan-shaped backboard as soon as it is feasible.

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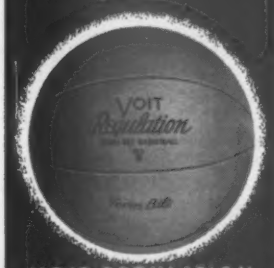

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Of The Athletic Journal, published monthly except July and August, at Chicago, for October, 1941.

State of Illinois } ss.
County of Cook }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared, John L. Griffith, Jr., who, having been duly sworn according to law, deposes and says that he is the owner and publisher of The Athletic Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, John L. Griffith, Jr., 6858 Glenwood Ave., Chicago. Editor, John L. Griffith, Jr., 6858 Glenwood Ave., Chicago. Managing Editor, John L. Griffith, Jr., 6858 Glenwood Ave., Chicago. Business Manager, John L. Griffith, Jr., 6858 Glenwood Ave., Chicago.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of the total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) John L. Griffith, Jr., 6858 Glenwood Ave., Chicago.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is.....(This information is required from daily publications only.)

JOHN L. GRIFFITH, JR.
(Signature of publisher.)

Sworn to and subscribed before me this 23rd day of September, 1941.
[SEAL] MICHAEL A. BINSFELD.
(My commission expires August 4, 1944.)

Football in Junior High School—Yes and No

By Howard G. Mundt

Ward Junior High School, University City, Missouri

THE controversy regarding football in the junior high school has been going on for years and will most likely continue for years. I have been coaching junior high school football the past five years and have made a few observations, pro and con, during that time.

Conducted properly, football is a good activity for junior high school boys. It seems, from my experience, that many junior high schools try to follow, in athletics, the pattern of the senior high school. There is too much "cut-throat" competition, even in junior high schools, the aim being only victory in many instances, rather than an emphasis on sportsmanship or on the idea of play for its own sake.

I feel that there is a place in the program for the superior athlete to derive satisfaction by competing with other superior athletes. I believe in such competition, provided other individuals are not being deprived of the privilege of participation in some other activity. The weakness of many after-school programs is that games and athletics are not varied so that all who wish may participate regularly in some activity. It takes continuous practice to develop a junior high school football team, and, because of that, some other phase of the physical education program may suffer.

If all boys who wish to play football could play interscholastically or intramurally, the football program could be a success. It seems, however, that the intramural program usually suffers, due many times to lack of play space or coaching aid.

Is the average junior high school boy physiologically fit to play football? There are answers to both sides of that question. If the teams are average in size, age, etc., then competition will be more or less equal. Many times, however, boys of unequal classification are pitted against each other in the desire for victory. Studies indicate that the greatest period of growth for boys is between the ages of eleven and fifteen. The junior high school boy is in that classification. It is important, then, that we, in the junior high schools watch for the proper type of opposition and guard against too strenuous practice sessions.

I believe that there are many valuable learnings in the so-called varsity sports, and the habits resulting from such physical effort are important. Almost any group sport is helpful to the average boy and girl. All should have the opportunity to participate.

Are we letting our varsity sports take precedence over all other activities, or are we administering a well-rounded program, taking into consideration the needs and capacities of our students?

A Survey of Preliminary Football Training

By Elmer Huhta

Hoquiam, Washington, High School

HIGH school football has made great strides in the past decade. During the period of rapid growth many problems have been faced and successfully worked out. Academic and age eligibility, medical supervision, improved equipment, better trained coaches and many other advances may be noticed.

Additional training, other than that received during the actual football season, has long been advocated by coaches. The sport is one of the most difficult to coach. Coming as it does at the start of the fall term, there is hardly sufficient time for a coach to do a thorough job. A large number of candidates appear in many schools; many positions are to be filled; substitutes are to be selected; and there is much individual work that can be done only on the practice field. The other major sport seasons overlap, allowing an athlete to turn out for basketball, for instance, while football is still in progress. To allow the boys, and the spectators, to receive the most benefits from the game, it is necessary, I believe, that some form of preliminary training be given to the players.

This problem has been met in the different states in various ways. To acquire a perspective on preliminary training the athletic boards of each of the states (Washington excepted) were polled. They all were anxious to co-operate and interested in the collective findings.

The questionnaire carried the following items:

1. Are there rules governing spring football practice in your state?
2. Does your state completely ban spring practice in high school?
3. In case of a rule banning spring football, is there time given in the fall before school is officially started for training and conditioning?
4. If an early start is permissible, how many days are given for it?
5. When does your football season begin and end in the fall?
6. If your plan is in any way different and not covered by these questions, please explain.
7. Do you wish a copy of this report?

Of the forty-seven questionnaires sent out, all but those going to Arkansas, Mississippi and Massachusetts were filled out promptly and returned.

The report reveals that 80 per cent of the states allow preliminary training.

Thirty states reported that spring training is allowed. Those states are: Montana, Florida, Minnesota, Missouri, Iowa, Nevada, Illinois, Louisiana, Maine, South Carolina, Alabama, Texas, Wisconsin, North Carolina, Rhode Island, Vermont, Tennessee, California, South Dakota, Indiana, Colorado, New Mexico, Wyoming, New Hampshire, Oklahoma, Kentucky, Georgia, Ohio, Arizona and Connecticut.

Fourteen reports showed that spring training is banned in the following states: Utah, Virginia, Delaware, West Virginia, New Jersey, Michigan, Nebraska, Kansas, North Dakota, Oregon, Idaho, New York, Pennsylvania and Washington.

High school football is prohibited in Maryland.

Five of the fourteen states banning spring training allow preliminary practice before the start of the fall term. They are: Virginia, West Virginia, Nebraska, North Dakota and Pennsylvania.

Thirteen of the states that allow spring training also favor preliminary fall practice. They are: Indiana, New Mexico, California, Montana, Wyoming, New Hampshire, Georgia, Iowa, South Dakota, Tennessee, Vermont, Nevada and Minnesota.

Thirty-five states out of the forty-four answering the poll allow either spring or preliminary fall training, or both. To me, the most important fact is the predominance of early fall practice. Eleven of the states (Virginia, West Virginia, Nebraska, North Dakota, Pennsylvania, New Mexico, Montana, Wyoming, South Dakota, Nevada and Minnesota) permit coaches to begin their training one week before the opening of school. Indiana and Iowa allow a ten-day start. California, New Hampshire, Georgia, Tennessee and Vermont do not have restrictions, although in Vermont fall training usually is limited to one week. Summer camps are allowed in Georgia.

Of the thirty states favoring spring football training, some have had, or will

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have, referendums on its necessity. Florida and Montana schools voted it out at one time but brought it back the next year. Wisconsin and Texas schools will vote this fall; in Texas the feeling is that it will be retained.

Sentiment in Colorado, Wyoming and Kentucky is against such training. Kentucky still retains the privilege. In Iowa and California there is talk of banning spring football. Spring training was voted out in Washington early this year after much discussion. At that time there was a strong opinion for early fall practice. In Oklahoma thirty days are allowed for practice. Louisiana has three weeks. Alabama has three weeks in January, February and March. Minnesota and Florida insist on no outside games during the spring.

I realize that conditions are not the same in all the states. Climatic differences, industrial problems, particularly seasonal occupations, and the variance in popularity of other sports all must be considered.

The athletic boards in 80 per cent of the states believe that preliminary practice is necessary. I am sure that the average football coach does not wish to be arbitrary about the matter. In many instances, especially in the smaller schools, he is in charge also of other phases of the athletic program. Preliminary training should be scheduled when it least interferes with other sports, but, at the same time, it should be held when the most good can be accomplished.

Spring training is of little value if players who will be active the next season are unable to attend practices because of participation in other sports. Therefore, in those cases, an early fall training period would be the solution. Ohio has met this problem by allowing those schools that do not feel they can accomplish the work during the spring to start August twentieth.

There was an attempt made to see if any correlation was noticeable in regard to accidents where preliminary training was allowed and where it was banned. Unfortunately there was little information gathered on this unusual situation.

Fundamentals are a major part of preliminary training. It has been found that, when an athlete is not grounded in the fundamentals of a sport, he is more susceptible to injuries and his health and well-being are impaired.

In conclusion I wish to thank all those who co-operated in this survey. If any state is benefited from the report the credit should be shared by all. The primary aim of coaches and administrators is to give our athletes the best of training and protection. It is with this thought that I offer my report.

Football Coaches! Teach Them. Do Not Merely Tell Them

(Continued from page 20)

contingencies which might arise during a game, it certainly is good coaching technique to allow various boys to act as captains and to make decisions during practice games or scrimmages. In this situation much telling will enter the picture, but it can be supplemented and, at times, evaluated by giving the acting captains opportunities to make decisions under conditions which approximate game conditions.

Good Coaching Demands Resourceful Teaching

The suggestions listed above are by no means intended to be complete. I have not tried to list all the possible situations in which teaching can be effectively substituted for telling. Neither have I listed the more obvious situations in which telling alone is ridiculous. Every experienced coach appreciates the fact that he cannot substitute telling a kicker to get his punts off fast for drills in which he is rushed by defensive men, and in which he learns effectively the necessity for speed in getting away his kicks. Similar drills must be applied to passers, etc. I have made an attempt to list some of the less obvious situations often left solely to telling, in which teaching technique can be employed much more effectively.

The resourceful coach will see many situations in which he can enhance his teaching technique through the learning situations which he sets up for his players. In my opinion, the older, experienced coaches do not have a monopoly upon teaching devices in making good football teams. Recently, while watching a practice session of one of our top-ranking professional teams, I was surprised because the coach continually talked when he might have taught much more effectively. He was having an offensive drill in pass catching. The potential receivers were running down field and cutting at an angle too deep to satisfy the coach. The coach was standing in defensive territory about thirty yards deep, while the players were supposed to cut fifteen yards down the field. The coach continued to *tell* the potential pass receivers to cut sooner, when he might have *taught* them quite easily, by taking his own position fifteen yards from the line of scrimmage and by making the players cut when they reached a point parallel to him. In this situation, simply moving

one's own position fifteen yards and having the players see at a glance what is wanted, would have been the difference between *telling* and *teaching*.

There are countless opportunities to substitute teaching tactics for telling in our football coaching. The resourceful coach who appreciates the fact that the learner learns to do by doing, will utilize these opportunities to make his coaching more effective and his football teams more successful.

The Athletic Coach and the Community Health Program

(Continued from page 17)

they should know that it must be thoroughly dried before they go outdoors, especially in the winter. Wet hair promotes colds and dry scalps. By all means, it is the coach's duty to promote all dressing room sanitation and cleanliness possible. Herein lies one big secret of health.

The importance of individual towels should be stressed. "Cleanliness begins in the dressing room and develops on the floor or field," is a well-known motto, but some of us may question the development of cleanliness on the floor when we see a common towel pushed across the floor for five boys to use, and one bottle from which they all sip water. To prevent this condition for my basketball team last winter, I secured the aid of the Industrial Arts Department and a small four-wheeled cart was made with various compartments in it. In this cart we placed a box of towel-sized Kleenex tissues, a water container, paper cups, smelling salts, etc. The Kleenex towels took care of the common towel problem, and a boy wanting a drink poured water from the container into the paper cup, and placed the used cup in the waste compartment of the cart. We always sterilized the water container and washed the entire cart with soap and hot water before each contest.

The coach should strive to insure provision for proper health equipment in his athletic budget. All athletic teams should have proper warm-up clothes, and when a player is taken from a contest hot and sweaty, he should be put in proper clothing. The coach must impress upon his boys the necessity for not cooling off too soon after getting hot. We all know how easily colds may be contracted from this.

The coach can render a great service to community health by promoting and insisting upon a broad intramural program. Through this program the student learns such games as tennis, golf, archery, handball, swimming, etc., all of which will furnish diversions for him as an adult at a time when participation in such sports has

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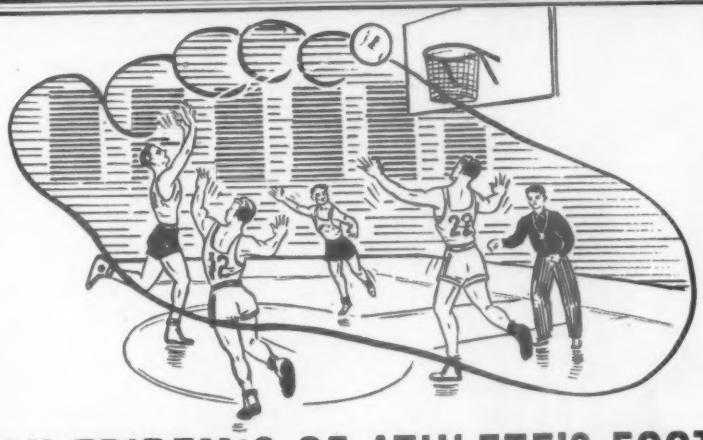

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much community health significance.

The Need of Proper Diet

The athletic coach performs a valuable community health function when he teaches proper training and diet to his boys. Training and conditioning are merely healthful living, and include proper eating and resting habits. The coach should always advise his boys to get between eight and ten hours of sleep every night in a well-ventilated room. He should advise them on what to eat. An athlete should have about 3500 to 4000 calories per day in his diet. It should contain all the vitamins, and be well balanced. The coach should always advise his boys to omit from their diet rich fats and to eat plenty of carbohydrates. The boys should be told to include in their daily diet proteins, starches, carbohydrates, fats (not in excess), mineral matter and vitamins. All of the above will be furnished in a diet that contains whole grain cereals, eggs, meat, a quart of milk a day, raw fruits, green vegetables such as spinach and lettuce, citrus fruits, bread, butter, leafy vegetables and cooked vegetables such as potatoes, peas and beans. The motto should be a "balanced diet" and more of it. Athletes should avoid greasy foods, and should be told why they must avoid them, and why the foods suggested make a balanced diet. A boy must know the value of good eating habits, and be taught to avoid over-eating and eating between meals. He must be shown the necessity for the stomach's rest period, and know that, with the stomach active, the other parts of the body will not be active or respond to activity calls as well. The evils of alcohol and tobacco are well known and their poisonous effect upon the system should be shown. This training program furnishes the athletic coach with one of his best health teaching devices. It is easy to show a boy that he cannot do his best in his efforts to achieve unless he trains or conditions himself. This requires wholesome living. One's physical condition is determined by one's obedience to the laws of health. It is a simple matter gradually to expand this ideal that has to do with the maintenance of condition for athletic achievement into an ideal of maintaining condition for all functions of life. Health then gains a meaning for life. Every fact of personal hygiene, physiology and anatomy, by this method, may be tied up naturally to the boy's spontaneous interest in his athletic achievement. His own problem in maintaining condition for achievement motivates his health activities in not only diet, sleep, rest, but, also, in other health measures.

The Prevention of Fatigue

One item which an athletic coach must be careful to watch is fatigue. The coach must remember that he is to build the boy up through athletics, and not to tear him down. A coach can overwork boys, tearing down body cells. Prolonged overwork will result in cumulative fatigue, which will make the boy more susceptible to disease, and will weaken him generally. "Staleness," a term common to athletics, is nothing more than prolonged fatigue resulting from overwork. Nobody gains by this, and the boy's health is affected unfavorably.

Adequate Lighting and Ventilation

The physical plant has already been mentioned, but here we need to mention it again. The lighting facilities of the plant should be adequate and properly installed. The basketball floor should be designed to prevent eye strain. On a well-lighted floor, accidents are not so likely to occur as on a poorly lighted one. The basketball floor should be uniformly lighted with a minimum of 10-foot candle power at four feet above the floor. The units should be placed so that they will not obstruct the vision of a player throwing for a goal. All gymnasiums should be heated to a healthful temperature for practice periods. This should not be above 68° F., and the ventilation should be adequate. Usually when a new physical plant is installed, or when a plant is remodelled, the coach is consulted concerning certain details. When at all within the power of the coach, he should see that the school has one lavatory for every fifteen to twenty boys and one shower for about every five boys with plenty of soap and towel facilities provided.

The coach himself should have a thorough physical examination at the beginning of each year. We might say the same of all teachers. He should practice what he preaches, and be an example of health for all students. He should have been immunized against diphtheria, typhoid, and smallpox. He should have the Widal test, and the tuberculin skin test followed by periodic X-rays if the test is positive. All of the above mentioned should be required of all students also, but there is little value in requiring them for the students and not for the teachers. If such an immunization program is not already carried on in the school, in which a coach is employed, certainly he should point out the advantages of such a program, and the dangers imminent by the lack of such a program. A good first class school will not be long without immunization programs carried out systematically and regularly.

The coach should be well trained in first-aid procedures. In case of accidents and sudden illness, he should give immediate care, notify the parents, get the student home, and guide the parents, when necessary, to sources of further treatment. It is a good policy to have posted in a

convenient place the names and telephone numbers of all doctors available in case of emergencies.

If a boy complains of being ill, the coach should isolate him at once, for he may be coming down with a communicable disease. As soon as possible he should be sent home. If it is found later, that he has a contagious disease, it is a good thing to see that his equipment is sterilized and properly treated for the disease, and all fixtures which he touched washed with soap and water.

A boy with symptoms of a beginning cold should be sent home immediately. Since some diseases start with cold symptoms, it pays to take no chances; even if nothing more than a cold develops, he will not have infected other students. The coach would be rendering a real service to his school and community if he could influence his principal to make this a rule for the entire school. Such a rule will help prevent cold epidemics in the school and community. The school may be a cold-exchange center for the entire community, if proper precautions are not taken.

The coach should be interested in promoting the proper ratio of work and play for all students in school. He should ask no favors for his athletes. They should be expected to produce in studies as anyone else would. This policy will bring about the proper ratio of work and play and consequently better mental hygiene, and fewer problem students. These boys, well adjusted mentally and physically, will carry their influence into the community.

If the community has no adult recreation program, the coach should see that one is provided and that the gymnasium is free for such a program. Such a program will add to the community spirit, and furnish recreation for persons badly in need of it, thereby bettering the general health of the community.

Logical Line Blocking to Meet Changing Defenses

(Continued from page 6)

offers the advantages of an over-shift without apparent loss of defensive strength on the weak side. In this grouping strangely enough, the same primary assignment demands exist as are found against the five-man line defensive set-up.

Normal grouping for logical blocking assignment practice is best used as a preliminary drill just prior to your dummy signal practices. It is worth while to review the reasoning logic behind offensive theory, and no time in your practice schedule is better suited for it than this period prefacing your practice of plays.

1. If your squad is large enough, pick your first three lines and use them alter-

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nately against any type of defense you choose to drill against.

2. Have the line take a normal offensive position.

3. Check and see that the defensive spacing is as you want it.

4. Point out the logical grouping by reasoning it out with the linemen.

5. Separate the groups by making a yard split between them and work on the various problems with which each group is confronted. Be sure that the boys in the second and third lines are critically observing the assignment and its execution, which they will be called upon to do in turn.

To teach doubt assignments, intentionally space the defense out of position every third or fourth time. This is best done by moving a lineman out to the split between the groups. Obviously this changes the grouping, in that the first demand on a lineman in doubt is to look to the inside. The other doubt assignments as listed above also apply.

This grouping will better teach line assignments for standard plays and will emphasize *primary responsibility*. Couple "logical blocking" through grouping with the rules covering what to do in case of doubt and your team will be well along on the right road to mastering a method of coping with modern changing defenses.

Individual Defensive Line Play

(*Continued from page* 15)

Next, in Illustration 19, we see the defensive left end being misled by the deception of the play rather than working his inside territory first. He has not only failed to go to the tackle line, but has also charged beyond the blocking line, making it possible for the blocker to use a reverse body block. Compare this picture with Illustration 21.

Let us take some situations and analyze them. To begin with, in Diagram 28 we have the offensive wing halfback blocking back on the defensive tackle. Here the defensive end supports to the tackle line immediately. If the defensive tackle can hold his ground and the defensive end can reach the intersection of the tackle and blocking line, the play cannot possibly get any development to the inside of the end (see Illustration 4 also). Furthermore, when the end comes to the point designated in Diagram 28, there is only one type of block that can be used, a shoulder-block. See Illustration 21 for the correct position of a defensive end.

The defensive end should also keep in mind that he gets help. Diagram 29 pictures what that help is. Here the defensive left halfback and left line-backers are supporting to the outside. Similarly the right line-backer and left tackle are supporting to the inside of the end.

Whenever a play goes to the opposite side, the defensive end should never follow. He never goes beyond his tackle line. This is shown in Diagram 30.

Illustration 20 shows a defensive end who has not only failed to charge but who has also failed to support his tackle line. The defensive tackle has played his territory, but a hole has developed between the tackle and the end. They are presenting themselves as the large mouth of a funnel.

Illustration 21 was taken from the movies of a Western Conference game. Here is a good illustration, under actual game conditions, of what is meant by the blocking line. Notice the offensive linemen pulling for interference and the position they occupy in relation to their offensive formation.

The defensive left end, 39, has gone to the intersection of the blocking and tackle lines. If he charges any deeper, he will make the inside play possible.

Illustration 22 shows the defensive left tackle holding his ground and not being moved laterally. The defensive left end has charged to the intersection of the blocking and tackle lines. This shows correct play of the end in relation to the tackle.

The rather exhaustive studies of line play appearing in this issue and in the September issue are in response to requests from several readers who, in the spirit of co-operation rather than criticism, asked for a full discussion of line play.—EDITOR'S NOTE.

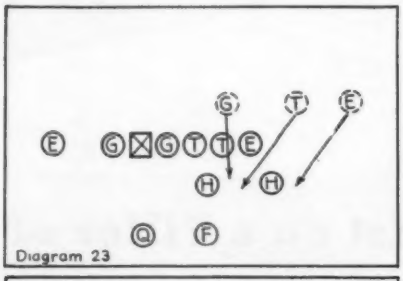
Diagram 23

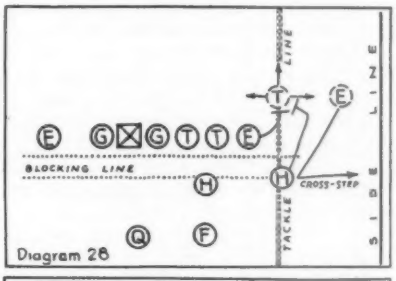

Diagram 28

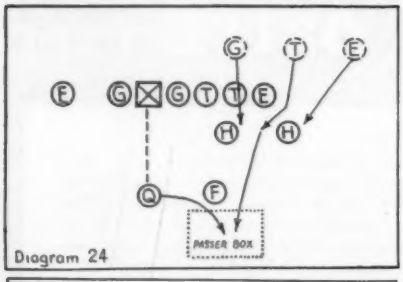

Diagram 24

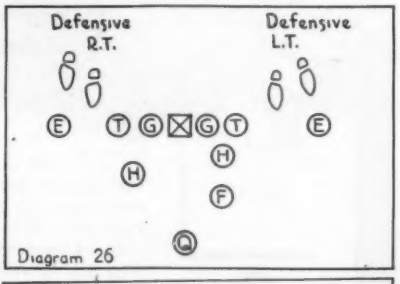

Diagram 26

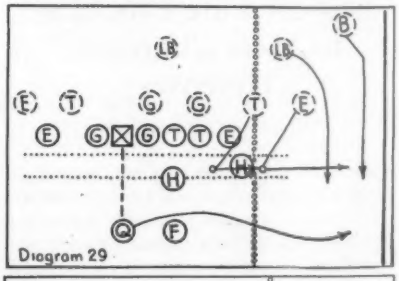
Diagram 29

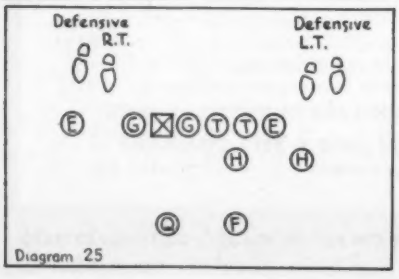

Diagram 25

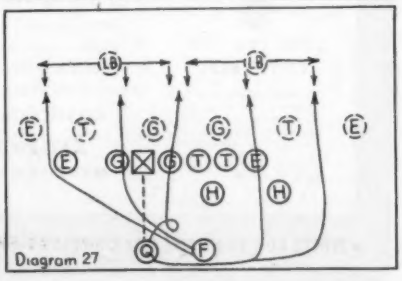
Diagram 27

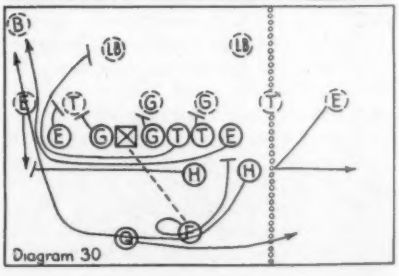
Diagram 30

More Time for a Bigger Job

MUCH has been said in recent months regarding the percentage of rejections in the draft due to physical disabilities. The answer is being supplied by those connected with physical education work. The answer is simple—more time must be devoted to that type of work than has been heretofore. Many of the colleges are taking the step by increasing the length of hours students must devote to physical education before credits for graduation can be secured.

Moves are under way to more rigidly enforce the laws which provide that a certain amount of the high school curriculum must be devoted to forms of physical education. This means that you coaches are going to be more heavily burdened with work than in the past.

In connection with our Coaches Ready Reference Buying Guide, run in the May and June issues, the substance of the comments reaching us was—it is a great time saver. We are therefore continuing our Coaches Ready Reference Buying Guide. This will permit you to secure information quickly and easily. It takes several days to compile these lists sent to the manufacturers so the sooner the request reaches us, the sooner you will receive the material from the manufacturer.

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Dolge Co., The C. B.	51	☐ Information on Alta-Co Powder
Lang Foot and Arch Normalizer	41	☐ Information
Sum Products Co.	41	☐ Information on Sum Ray Lamp

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Gilman, Marty	30	☐ Information on Fightback

BASKET BALLS

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SCOREBOARDS

Fair Play Mfg. Co.	47	☐ Catalogue

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Leavitt Mfg. Co.	30	☐ Free Layout Service and Folder

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McArthur & Sons, George	46	☐ Booklet on Towel Systems

GYMNASIUM EQUIPMENT AND BASKETBALL BANKS

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BOXING RINGS AND MATS

National Sports Equipment Co.	45	☐ Information

MATS

American Hair and Felt Co.	53	☐ Names of Manufacturers

RECONDITIONING OF ATHLETIC EQUIPMENT

Ivory System	Cover 4	☐ Sample of Leather Oil ☐ Sample of Dawhide Laces

HELPFUL BULLETINS

Athletic Institute	43	☐ List of Bulletins

BOOKS TO BE BILLED

Indiana Basketball Coaching School Notes	45	☐ $1.50
Fundamentals of Basketball	45	☐ 1 copy at $1.50
Practical Basketball	44	☐ 1 copy at $2.00
Athletic Journal Binder	48	☐ 25 cents each

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INDEX TO ADVERTISERS

	Page
Absorbine Jr.	50
American Hair & Felt Co.	53
Athletic Institute, The	43
Becton Dickinson & Co.	32
Bike Web Manufacturing Co.	Cover 2
Chattanooga Pharmacal Co.	41
Converse Rubber Co.	27
Denver Chemical Mfg. Co., The	42
Dolge Company, The C. B.	51
Fair Play Mfg. Co.	47
Fundamentals of Basketball	45
Gilman, Marty	30
Hood Rubber Co., Inc.	23
Hotel Sherman	Cover 3
Indiana Basketball Coaching School	45
Ivory System	Cover 4
Kahnfast Satins	47
Lang Foot and Arch Normalizer	41
Leavitt Corp., The	30
McArthur & Sons, George	46
Medart Mfg. Co., Fred	51, 53
Mishawaka Rubber & Woolen Mfg. Co.	3
National Sports Equipment Co.	45
Practical Basketball	44
Rawlings Manufacturing Co.	25
Riddell, Inc., John T.	44
Seamless Rubber Company	52
Skinner & Sons, William	49
Spalding & Bros., A. G.	21
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